

Figure 1. Amino acid sequence of the B4ECv3 protein

MELRVLLCWASLAAALEETLLNTKLETADLKWVTFPQVDGQWEELSG
LDEEQHSVRTYEVCVQRAPGQAHWLRTGWVPRRGAVHVVYATLRFTM
LECLSLPRAGRSCKETFTVFYYESDADTATALTPAWMENPYIKVDTV
AAEHLTRKRPGAEATGKVVNKTLLRLGPLSKAGFYLAQDQGACMALL
SLHLFYKKCAQLTVNLTRFPETVPRELVPVAGSCVVDVAVPAPGSP
SLYCREDGQWAEQPVGTGCSCAPGFEAAEGNTKCRACAQGTKPLSGE
GSCQPCPANSHTIGSAVCQCRVGYFRARTDPRGAPCTTPPSAPRS
VVSRLNGSSLHLEWSAPLES GGREDLTYALRCRECRPGGSCAPCGGD
LTFDPGPRDLVEPWVVVRGLRPDFTYTFEVTALNGVSSLATGPVPFE
PVNVTTDREVPPAVSDIRVTRSSPSSLSLAWAVPRAPSGAWLDYEVK
YHEKGAEGPSSVRFLKTSENRAELRGLKRGASYLVQVRARSEAGYGP
FGQEHHSQTQLDESEGWREQGSKRAILQIEGKPIPNPLLGLDSTRTG
HHHHHH

Figure 2. Amino acid sequence of the B4ECv3NT protein

MELRVLLCWASLAAALEETLLNTKLETADLKWVTFPQVDGQWEELSG
LDEEQHSVRTYEVCEVQRAPGQAHWLRTGWVPRRGAVHVIATLRFTM
LECLSLPRAGRSCKETFTVFYYESDADTATALTPAWMENPYIKVDTV
AAEHLTRKRPGAEATGKVNKTLRLGPLSKAGFYLAHQDQACMALL
SLHLFYKKCAQLTVNLTRFPETVPRELVPVAGSCVVDVAVPAPGPSP
SLYCREDGQWAEQPVGTGCSCAPGFEEAEGNTKCRACAQGTFFKPLSGE
GSCQPCPANSHSNTIGSAVCQCRVGYFRARTDPRGAPCTTPPSAPRS
VVSRLNGSSLHLEWSAPLES GGREDLTYALRCRECRPGGSCAPCGGD
LTFDPGPRDLVEPWVVVRGLRPDFTYTFEVTALNGVSSLATGPVPFE
PVNVTTDREVPPAVSDIRVTRSSPSSLSLAWAVPRAPSGAWLDYEVK
YHEKGAEGPSSVRFLKTSENRAELRGLKRGASYLVQVRARSEAGYGP
FGQEHHSQTQLDESEGWREQGSKRILQISSTVAAARV

Figure 3. Amino acid sequence of the B2EC protein

MAVRRDSVWKYCWGVLMLCRTAISKIVLEPIYWNSSNSKFLP
GQGLVLYPQIGDKLDIICPKVDSKTVGQYEYYKVYMWVDKDQADR
CTIKKENTPLLNCAKPDQDIKFTIKFQEFSPNLWGLEFQKNKDY
YIISTSNGLLEGLDNQEGGVCQTRAMKILMKVGQDASSAGSTRN
KDPTRRPELEAGTNGRSSTTSPFVKPNPGSSTDGNSAGHSGNNI
LGSEVGSHHHHH

Figure 4. Amino acid sequence of the B4ECv3-FC protein

MELRVLLCWASLAAALEETLLNTKLETADLKWVTFPQVDGQWEEL
SGLDEEQHSVRTYEVCEVQRAPGQAHWLRTGWVPRRGAVHVIATL
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QGACMALLSLHLFYKKCAQLTVNLTRFPETVPRELVPVAGSCVV
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CAQGTKPLSGEGSCQPCPANSHTIGSAVCQCRVGYFRARTDP
RGAPCTTPPSAPRSVVSRLNGSSLHLEWSAPLES GGREDLTYALR
CRECRPGGSCAPCGGDLTFDPGPRDLVEPWVVVRGLRPDFTYTFE
VTALNGVSSLATGPVPFEPVNVTTDREVPPAVSDIRVTRSSPSSL
SLAWAVPRAPSGAWLDYEVKYHEKGAEGPSSVRFLKTSENRAELR
GLKRGASYLVQVRARSEAGYGPFGEHHSQTQLDESEGWREQDPE
PKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTC
VVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVL
TVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTL
PPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPP
VLDSGDGSFFLYSKLTVDKSRWQQGNVFSCSVMEALHNHYTQKSL
SLSPGK

Figure 5. Amino acid sequence of the B2EC-FC protein

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SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVTV
DVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLH
QDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRD
ELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDG
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Fig. 6. B4EC-FC binding assay (Protein A-agarose based)

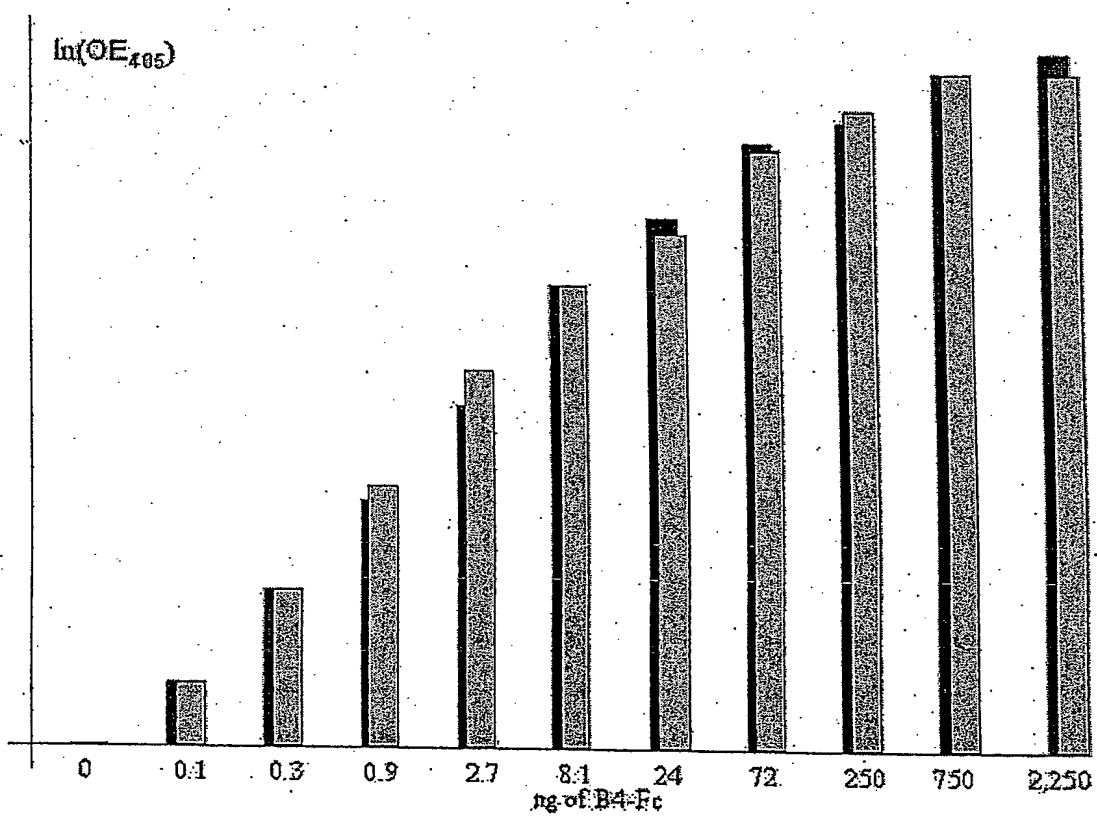


Fig. 7. B4EC-FC inhibition assay (Inhibition in solution)

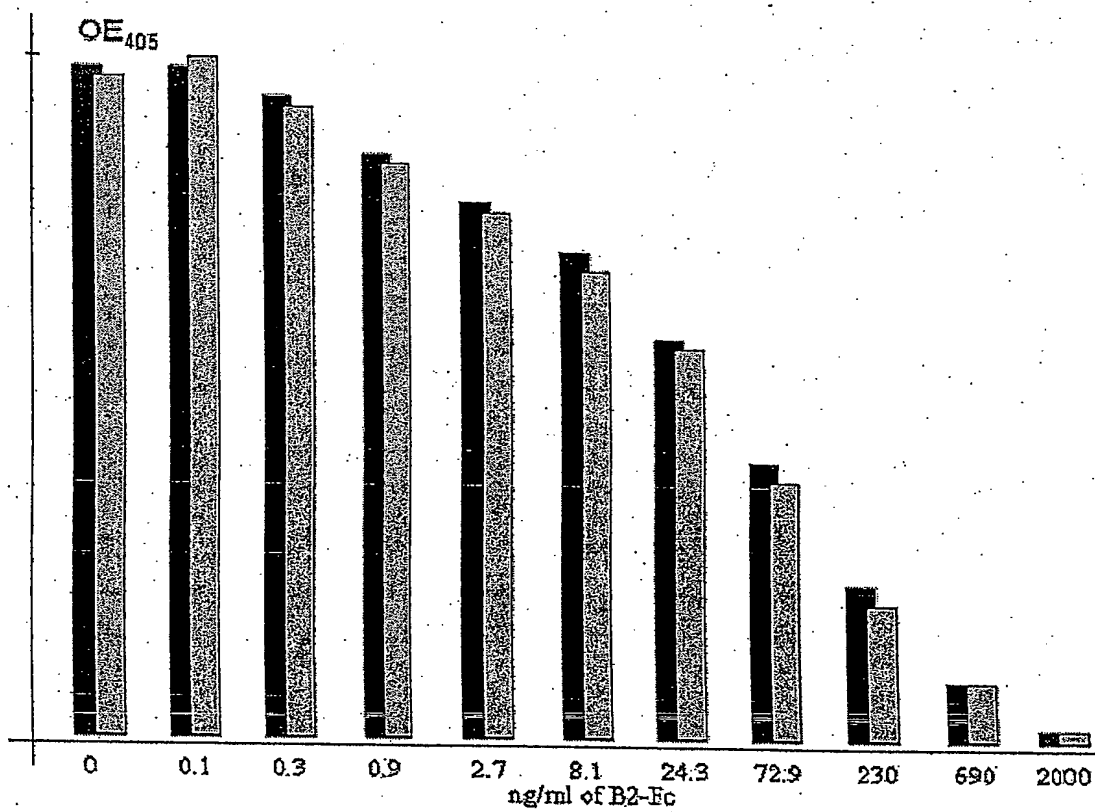


Fig. 8. B2EC-FC binding assay (Protein-A-agarose based assay)

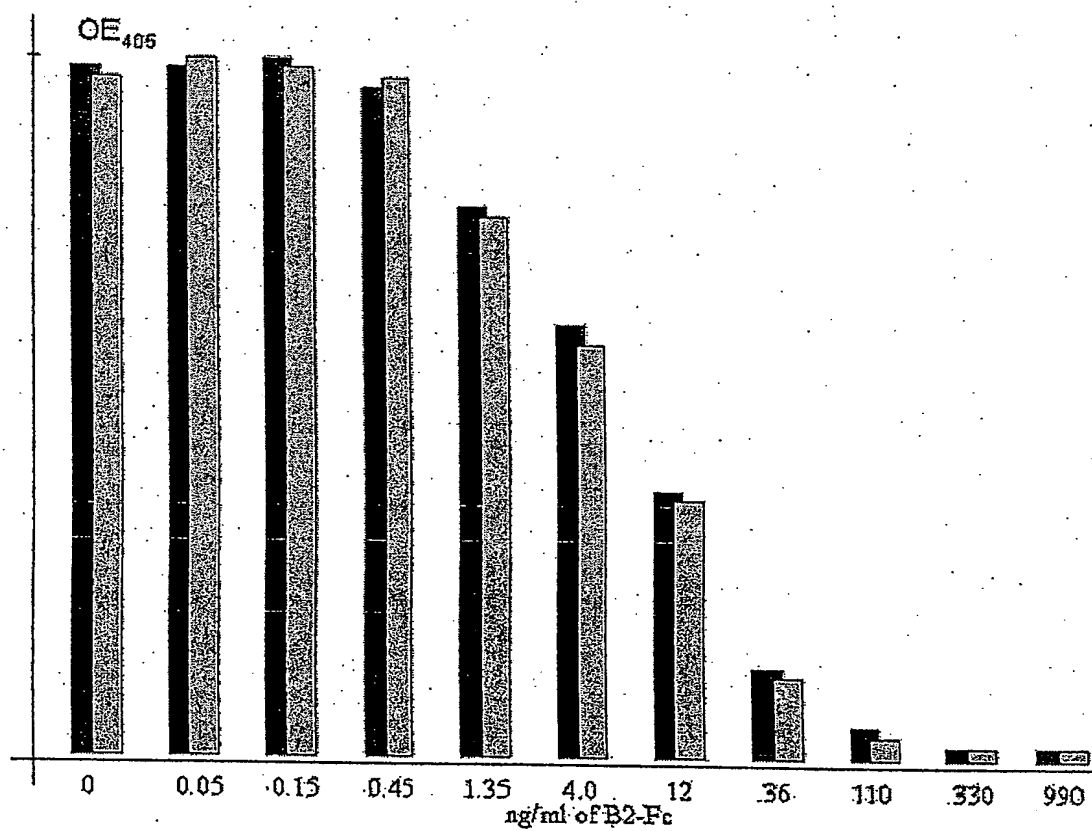


Fig. 9

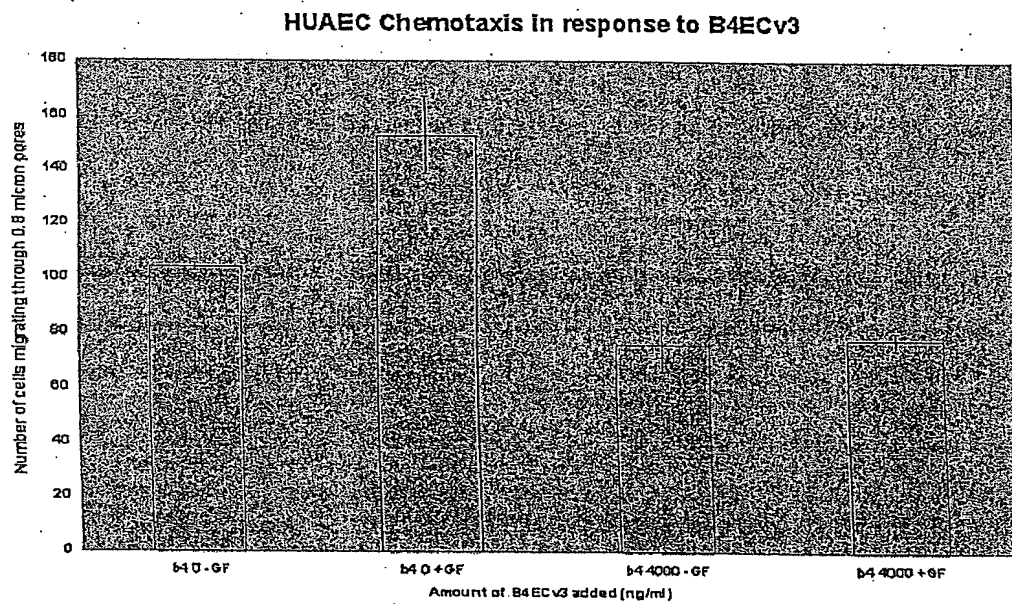


Fig. 10

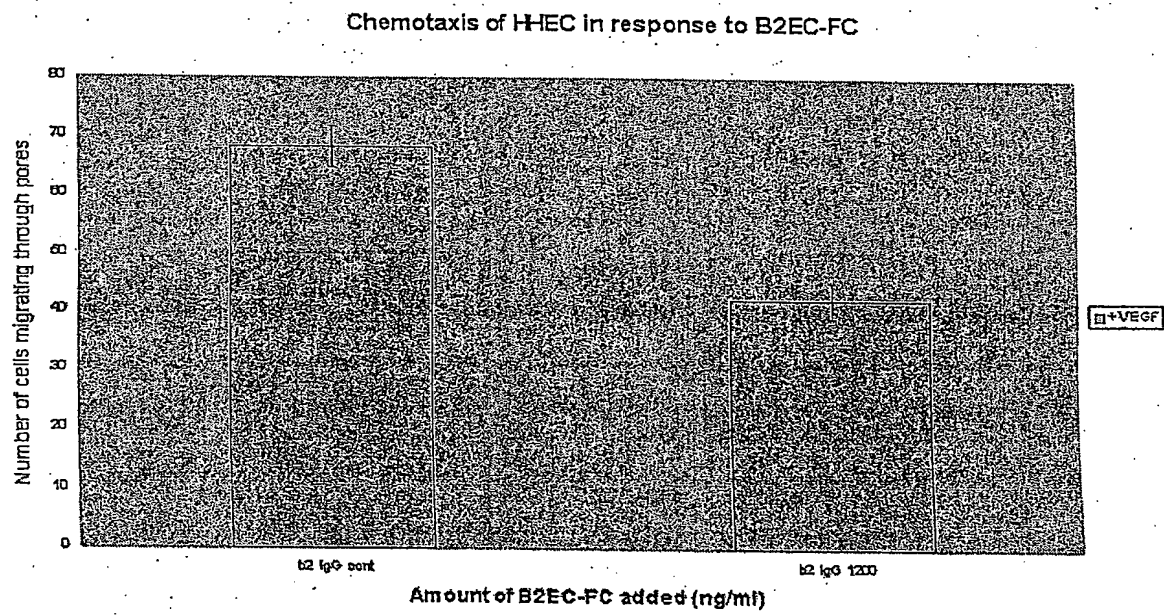


Fig. 11

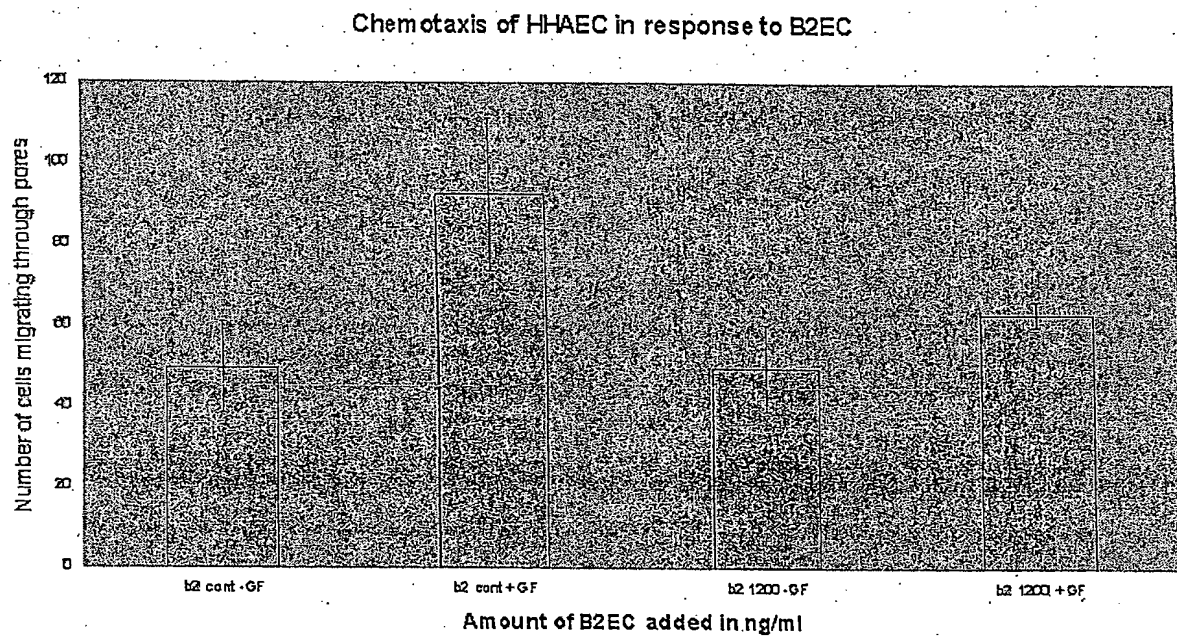


Fig. 12

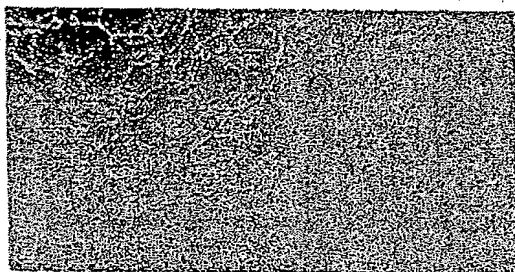
Effect of B4ECv3 on HUAEC Tubule Formation

**B4ECv3
μg/ml**

10 x magnification

20 x magnification

0



2

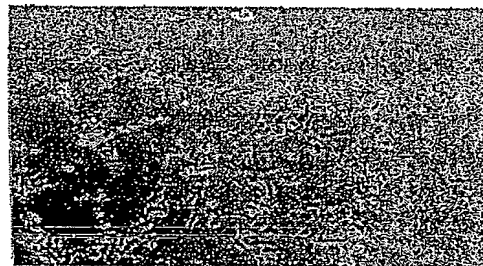
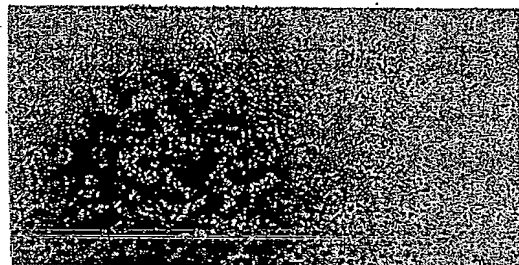
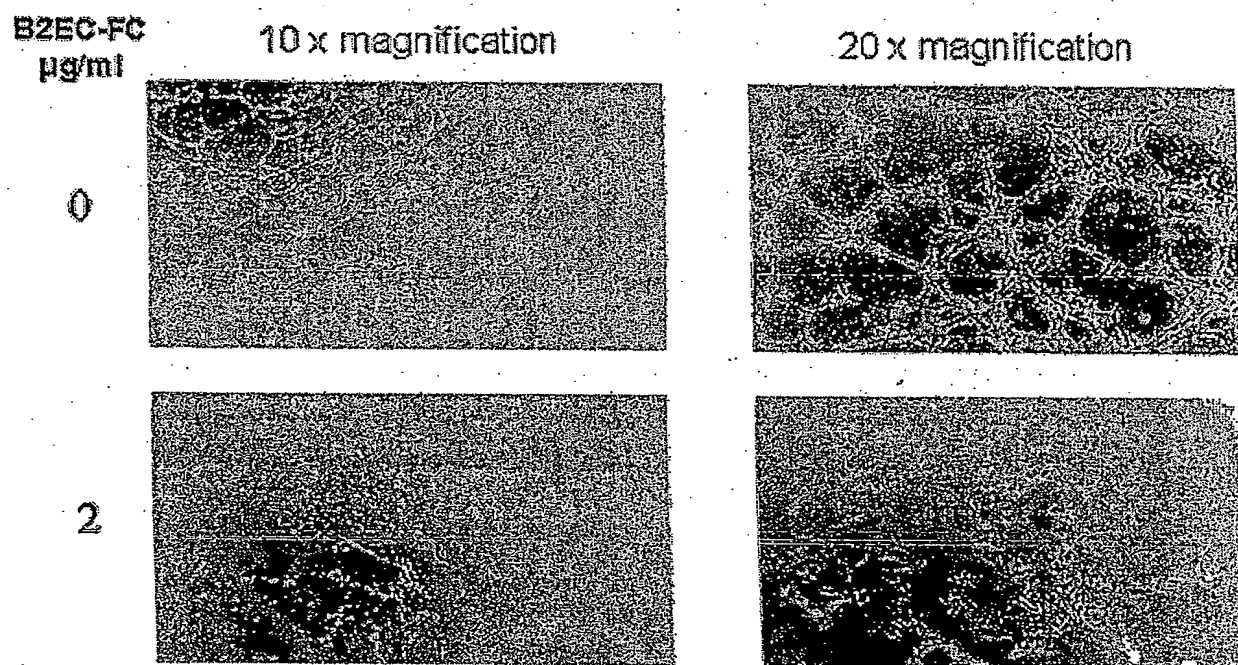


Fig. 13

Effect of B2EC-FC on HUAEC Tubule Formation



hEphrin B2 constructs

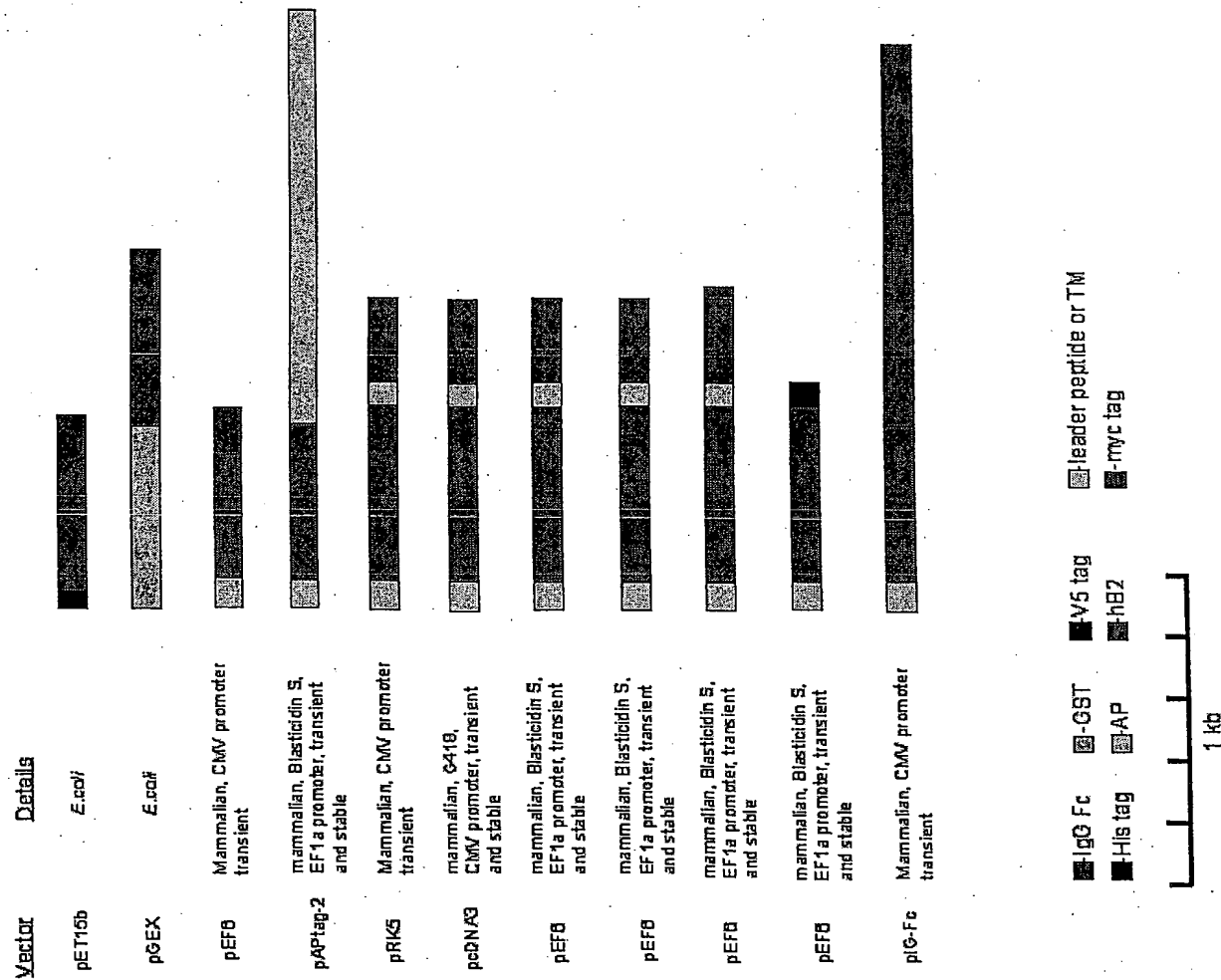
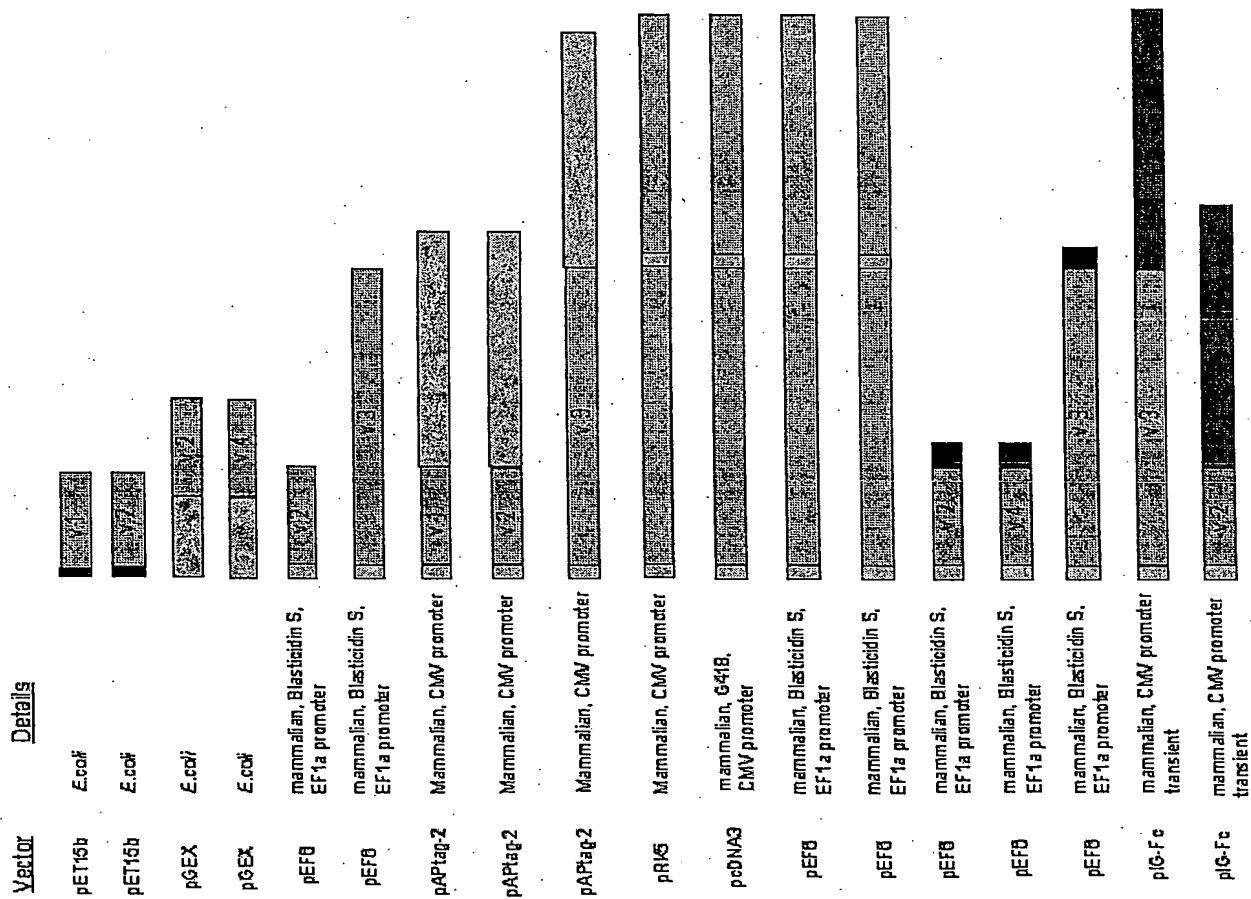






Figure 14

hEph B4 constructs



 His-tag
  AP
  hB4
  myc tag

 IgG Fc
  GST
  V5 tag
  leader peptide or TM

1 kb

Figure 15

Figure 16. Domain structure of the recombinant soluble EphB4EC proteins.

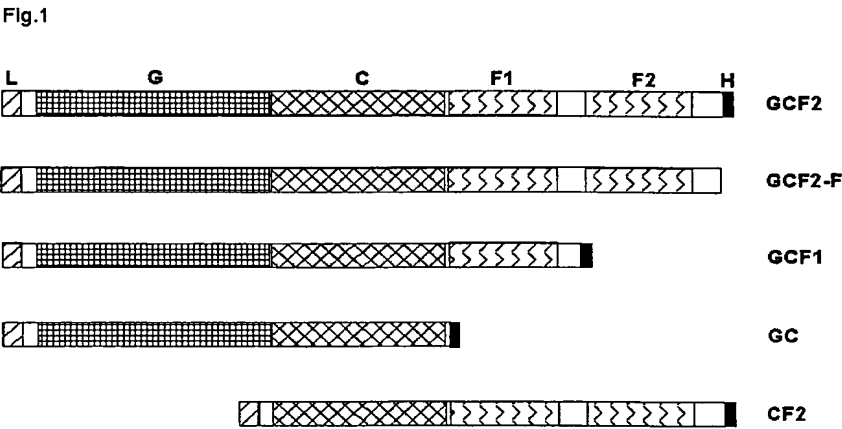


Figure 17A. Purification and ligand binding properties of the EphB4EC proteins

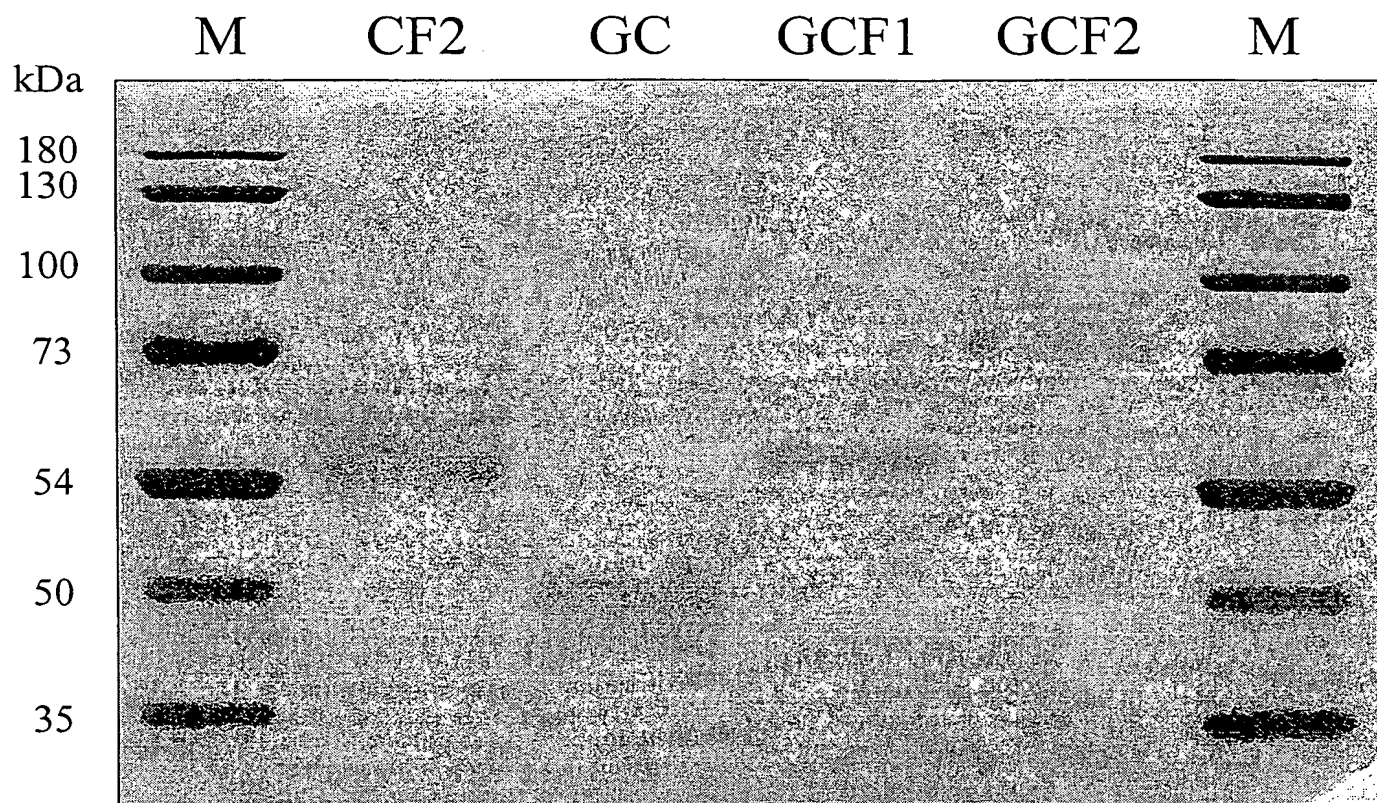


Figure 17B. Binding of Ephrin B2-AP fusion to EphB4-derived recombinant proteins immobilized on NTA-agarose beads.

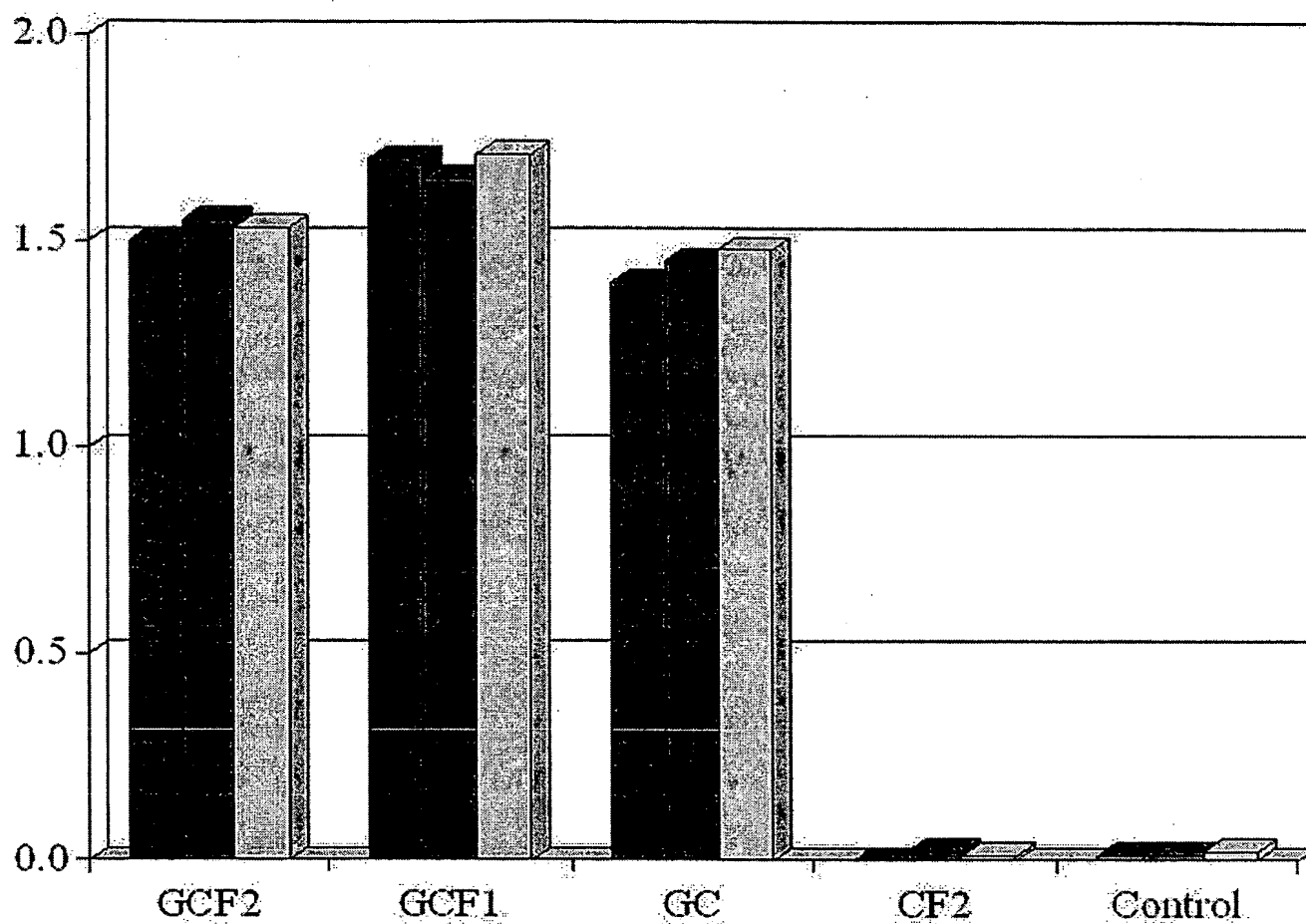
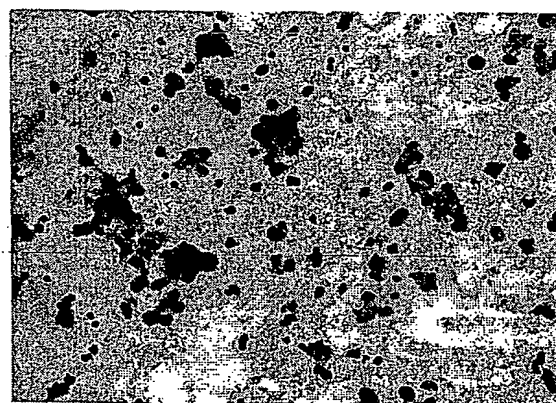
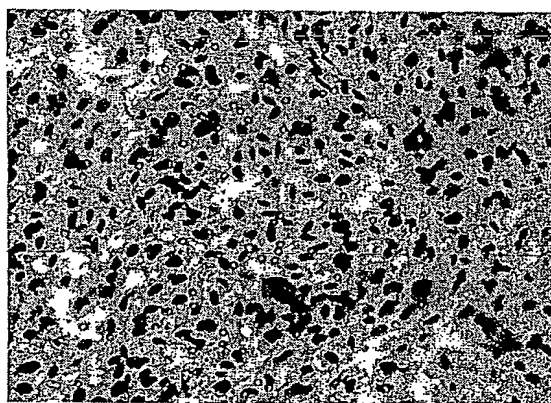
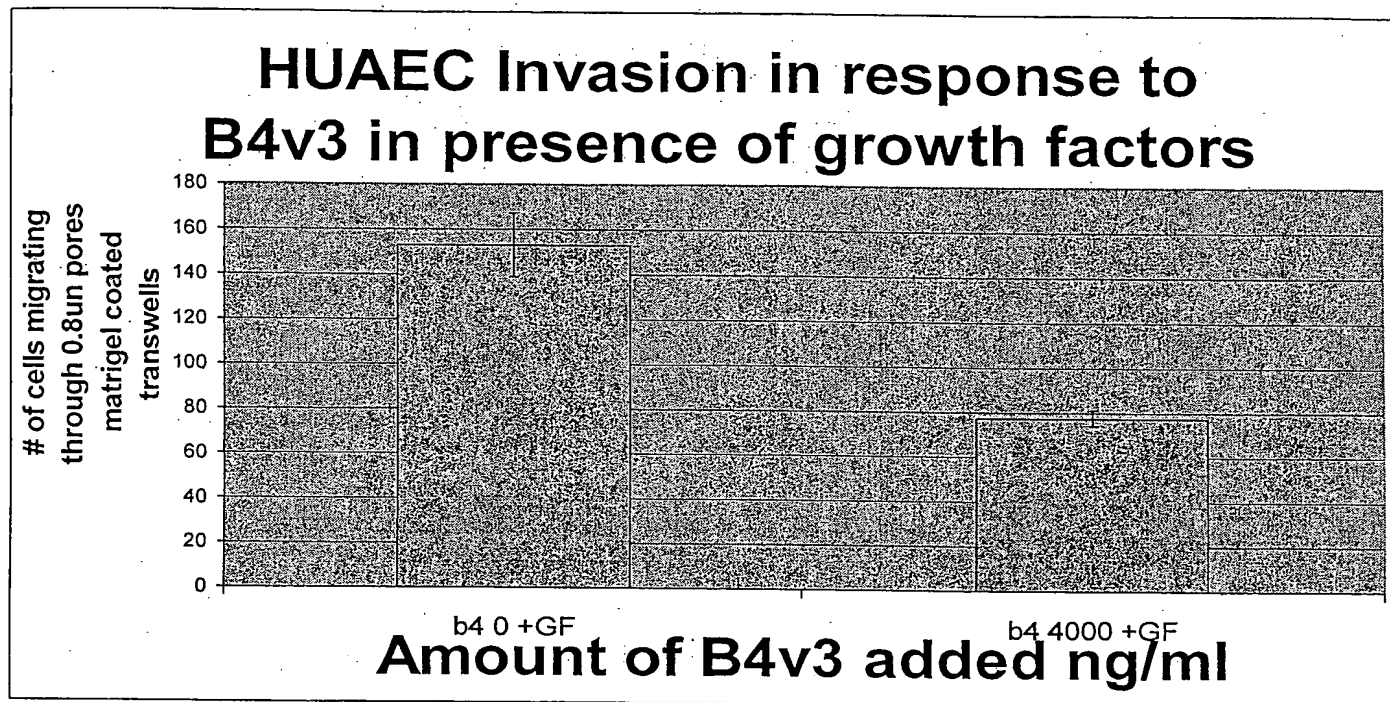


Fig. 18

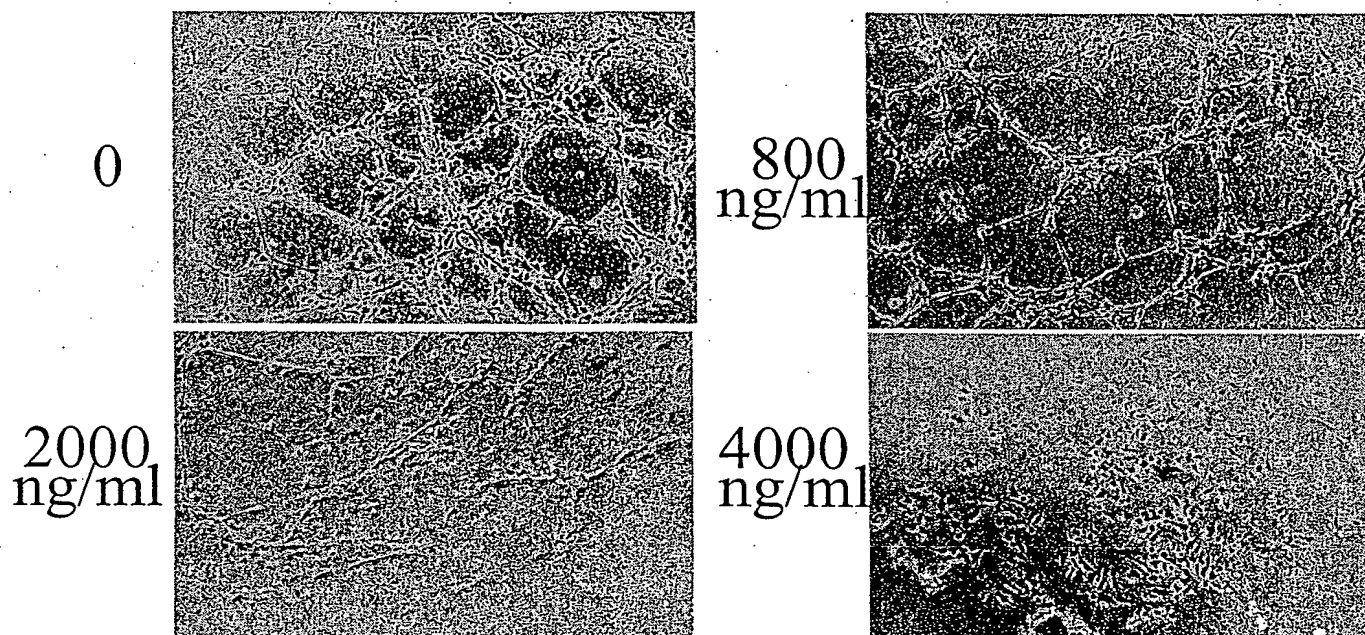
B4v3 inhibits chemotaxis, In Vitro Invasion Assay



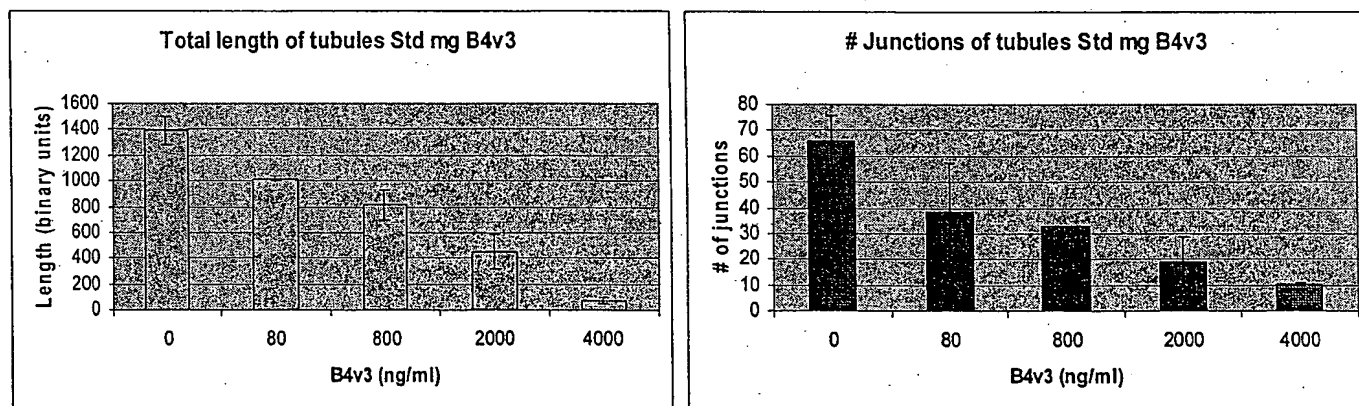
In Vitro Invasion Assay: Chemotaxis of HUAECs, measuring migration and degradation of basement membrane ability, was assessed using a modified Boyden chamber, transwell membrane filter inserts in 24 well plates, 6.5 mm diam, 8µm pore size, 10µm thick polycarbonate membranes. The upper surfaces of the transwell were pre-coated with matrigel. The cell suspensions of HUAECs in 0.25% BSA (2×10^5 cells/ml) in 200µl of EBM were seeded in the upper chamber and the B4v3 protein was added simultaneously with stimulant (VEGF or bFGF) to the lower compartment of the chamber and their migration across a polycarbonate filter in response to 10- 20 ng/ml of VEGF with or without 100nM- 1µM test compound was investigated. After incubation for 4-24h at 37, The upper surface of the filter was scraped with swab and filters were fixed and stained with Diff Quick. Triplicate. Ten random fields at 200x mag were counted and the results expressed as mean # per field

Fig. 19 B4v3 inhibits tubule formation on Matrigel.

A



B



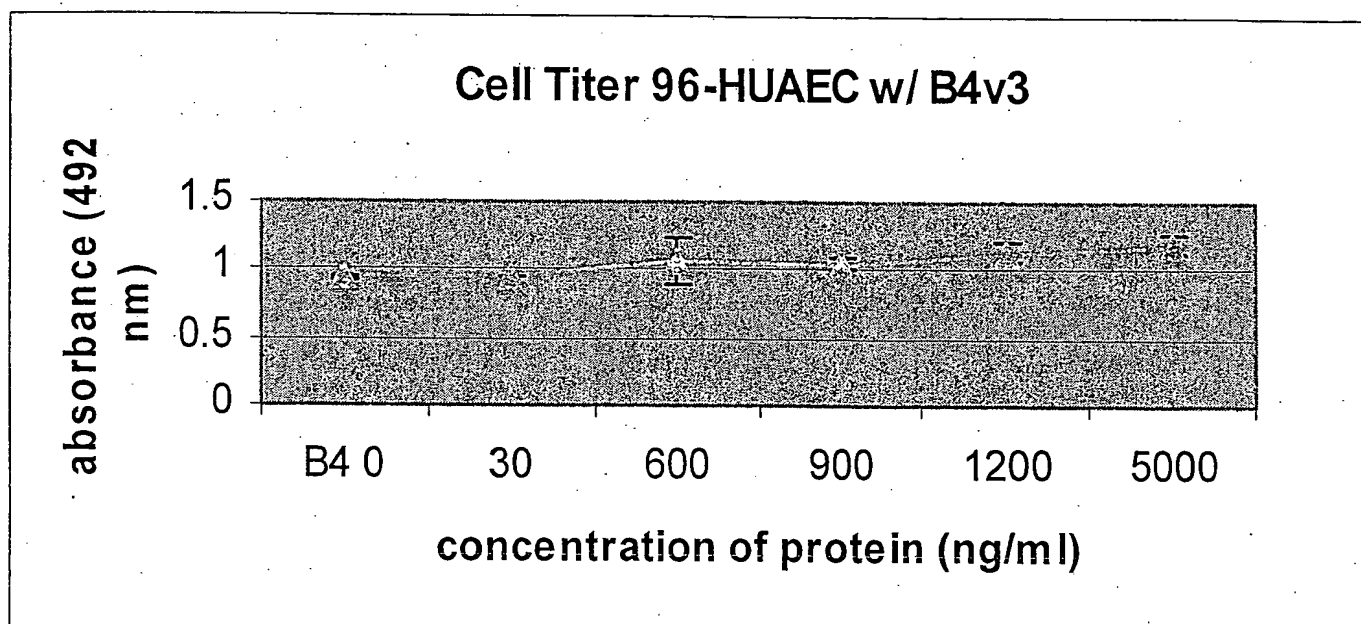
B4v3 inhibits tubule formation on Matrigel.

HUAEC cultures were cultured with B4v3, at 800, 2000, and 4000 ng/ml following seeding on STD matrigel in growth factor stimulated conditions, to analyze tubule formation. Cells were photographed 6h and 24h after seeding, 20X magnification, and the total length of the tubule-like network formed in the well, and # of junctions was established.

A, displays the strong inhibition of tubule formation by B4v3 in a representative experiment.

B, shows a quantitation, with AngioSys Software, of the reduction of tube-length obtained with B4v3 at increasing concentrations as well as a reduction in the number of junctions, in comparison to cells with no protein. Results are displayed as mean values \pm S.D. obtained from three independent experiments performed with duplicate wells.

Fig. 20

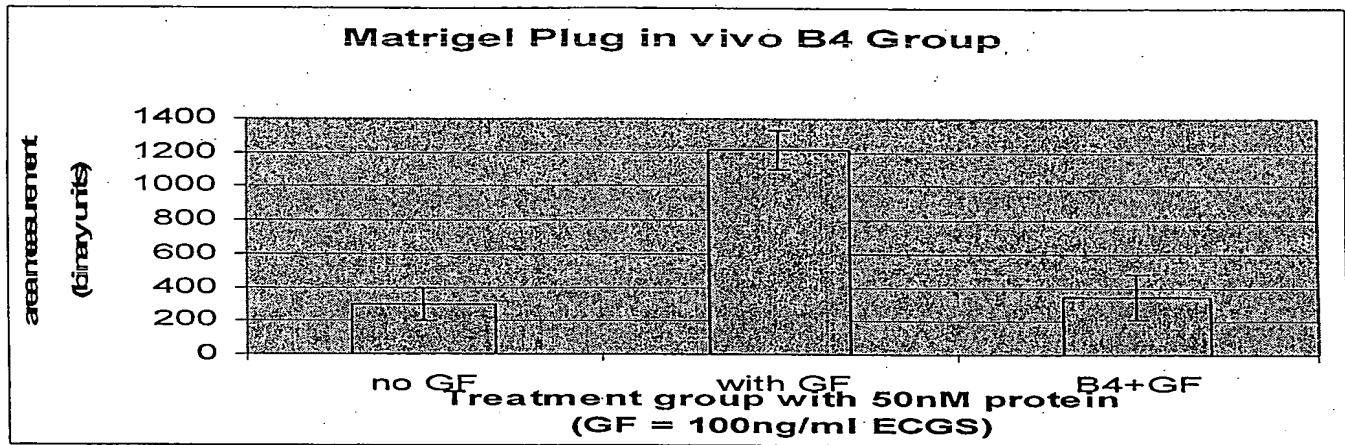
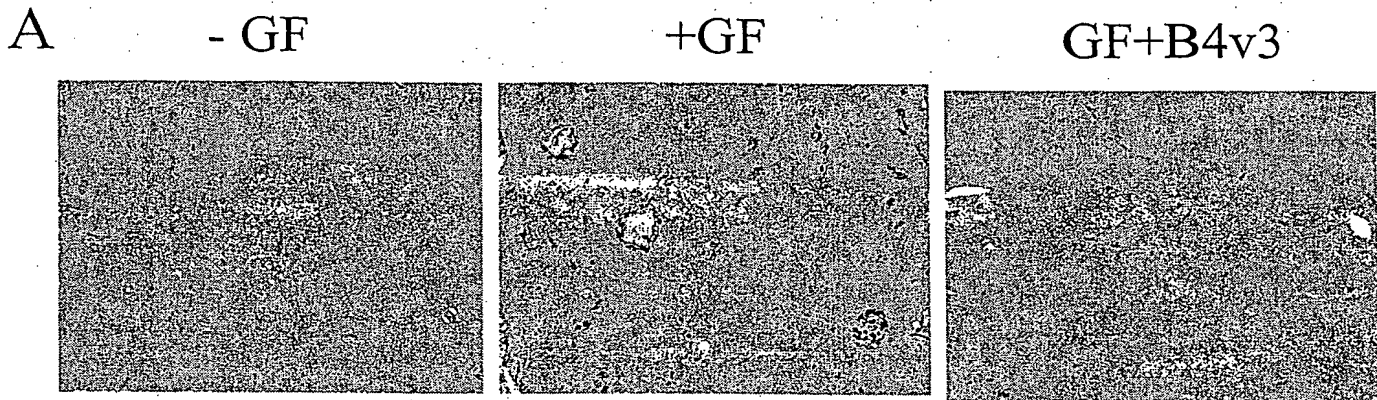


Cell viability assays:

Cell viability was determined using the (3-(4,5-dimethylthiazol-2-yl)-5-(3-carboxymethoxyphenyl)-2-(4-sulfophenyl)-2H-tetrazolium, inner salt (MTS) assay according to the instructions of the manufacturer (Promega, Madison, WI, USA).

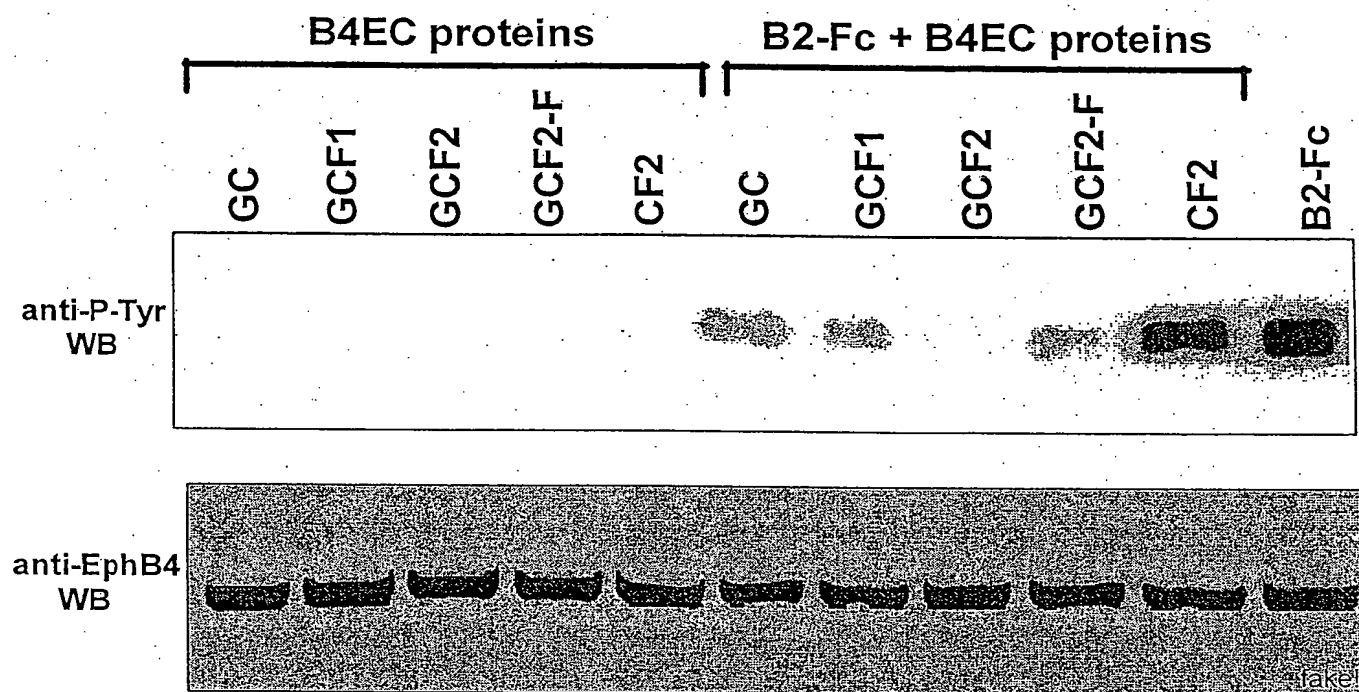
Fig. 21

B4v3 inhibits invasion and tubule formation by endothelial cells in the Murine Matrigel assay



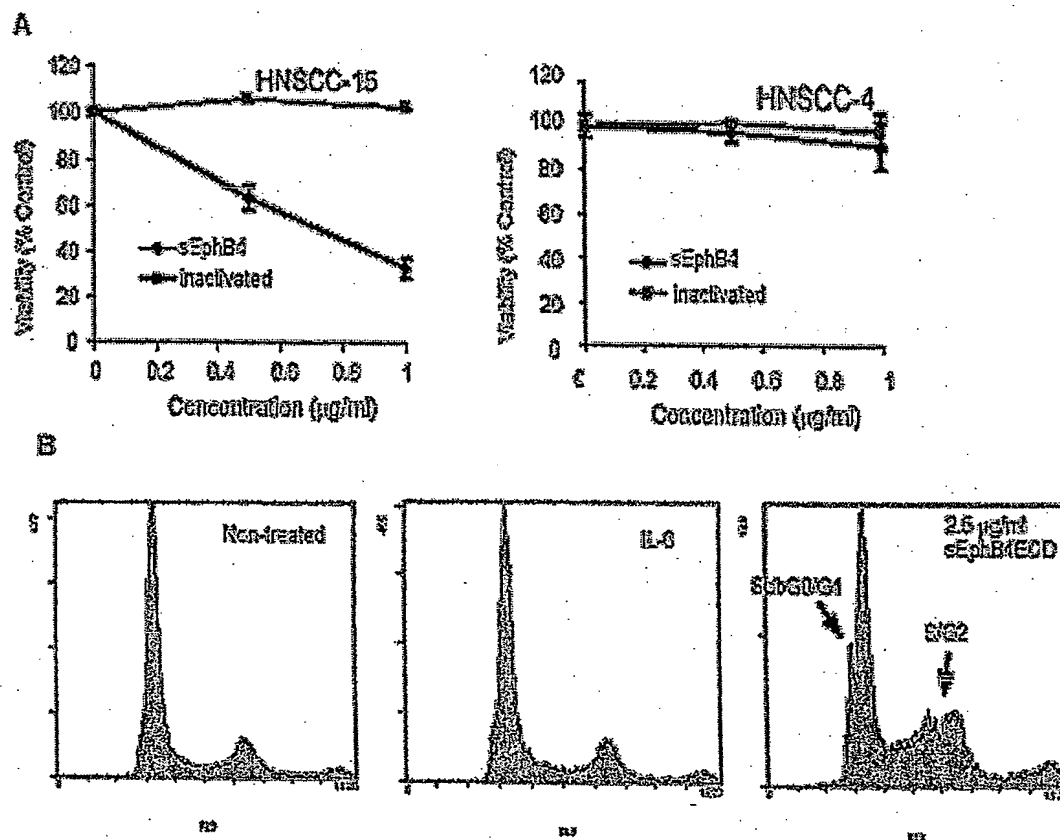
B4v3 inhibits invasion and tubule formation by endothelial cells in the murine Matrigel assay. B4v3 (50nM) was added to Matrigel solution containing ECGS (150ng/ml) and injected subcutaneously into BalbC nu/nu mice. After 6 days plugs were removed and processed in paraffin. Individual sections were either stained with hematoxylin (A) to detect total invading cells, photographed at 20X magnification or with Masson's Trichrome Top left of A B displays section of a Matrigel plug with no GF, top right of A displays section with B4IgG containing GF and lower left section contains GF, and lower right shows GF in the presence of B4v3. Significant invasion of endothelial cells is only seen in GF containing Matrigel. Top right displays an area with a high number of invaded cells induced by B4IgG, which signifies the dimeric form of B4v3. The left upper parts of the pictures correspond to the cell layers formed around the Matrigel plug from which cells invade toward the center of the plug located in the direction of the right lower corner. Total cells in sections of the Matrigel plugs were quantitated with Scion Image software. Results obtained from two experiments with duplicate plugs are displayed as mean values \pm S.D.

Fig. 22



Tyrosine phosphorylation of EphB4 receptor in PC3 cells in response to stimulation with EphrinB2-Fc fusion in presence or absence of EphB4-derived recombinant soluble proteins.

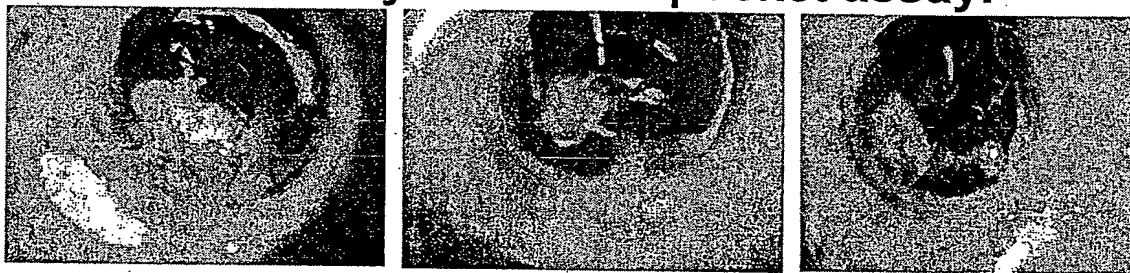
Fig. 23



Soluble EphB4ECD effects on viability and cell cycle. A) 3-day cell viability assay of two HNSCC cell lines. Cells were seeded on 48-well plates at equal densities and treated with 0, 0.5 or 1 µg/ml sEphB4ECD. Viability was determined on day 3 by MTT assay. Shown is the mean and SEM of triplicate samples. B) FACS analysis of cell cycle in HNSCC-15 cells treated as in A. It was previously determined that IL-6 had no inhibitory effect on viability. Treatment of those cells resulted in an accumulation in subG0/G1 and G2 phases as indicated by the arrows.

Fig. 24

B4v3 inhibits neovascular response in a murine corneal hydon micropocket assay.



+GF

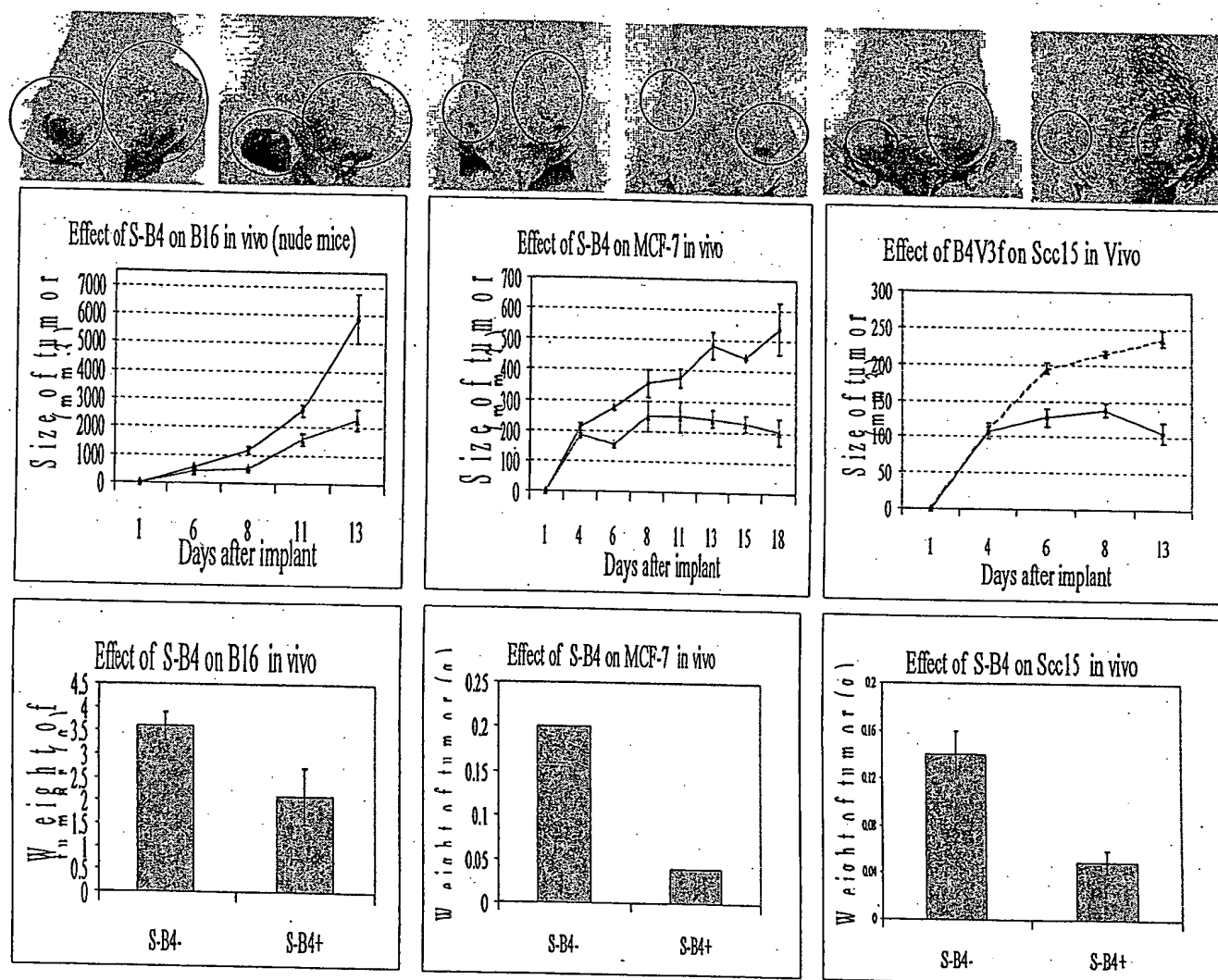
**B4
+GF**

-GF

B4v3 inhibits neovascular response in a murine corneal hydon micropocket assay.

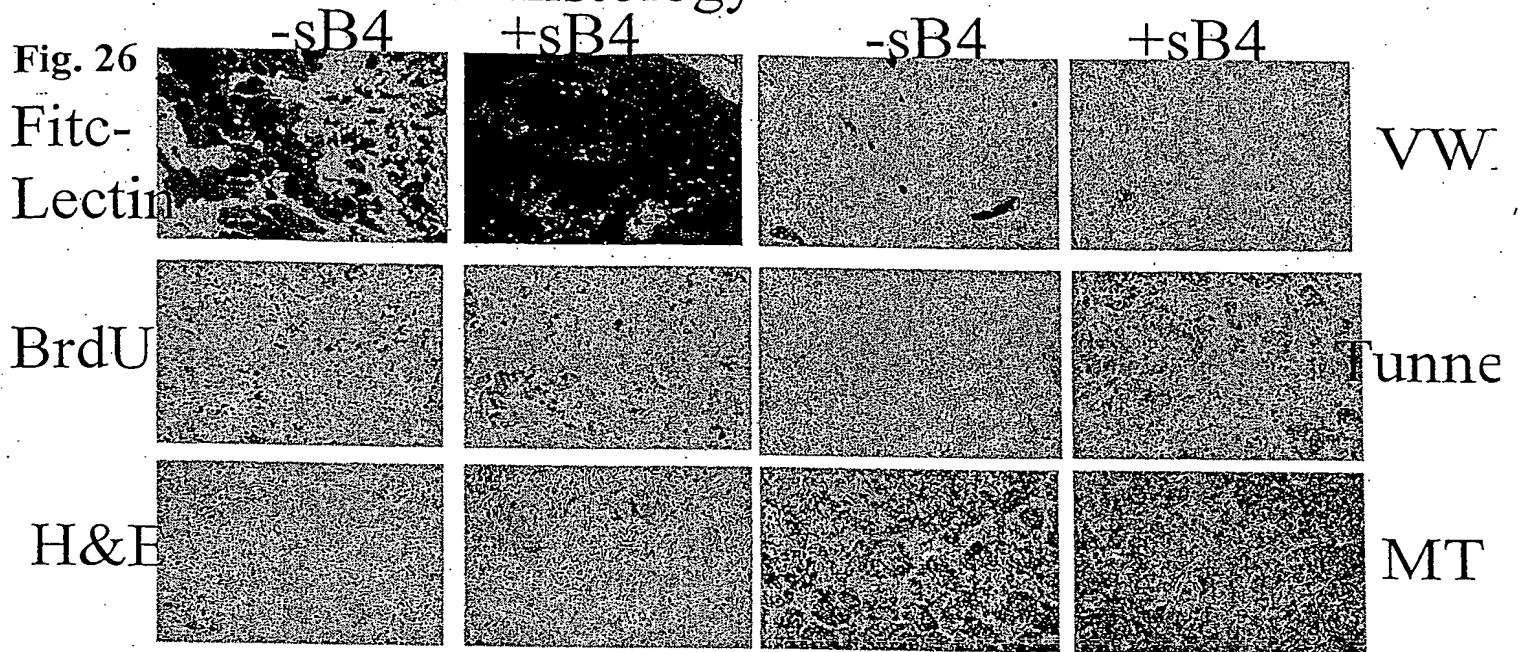
B4v3 (180ng) was added to hydon and sucralfate (45ug) with or without basic fibroblast growth factor (bFGF) (100ng) and pellets formed. The pellets were selected and inserted into a micropocket into corneas of BalbC nu/nu mice. After 3 days pellets were removed and processed in freezing compound. Only the bFGR-sucralfate pellet, top left, induced an intense neovascular response originating from the limbal vessels and reaching the pellet on day 3 after implantation. Pellets containing bFGF and sucralfate with B4v3 and B4f, top right and bottom left respectively, did not produce an angiogenic response above background, lower right, on day 3 after implantation.

Fig. 25

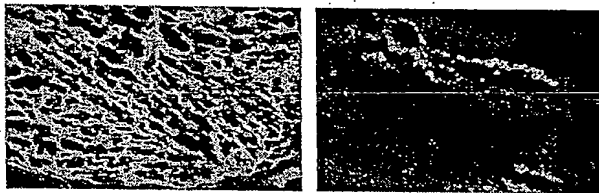


SCC15, B16, and MCF-7 co-injected with sB4v3 in the presence of matrigel and growth factors, inhibits the *in vivo* tumor growth of these cells. (A) sB4v3, 40mg per kg body weight were subcutaneously coinjected with $\times 10^6$ cells in a matrigel preparation. The representative picture shows retarded tumor growth in the presence of sB4 (left flank) compared with PBS control treatment (right flank). (B) Treatment with sB4 significantly inhibited human SCC, B16, and MCF-7 tumor growth compared with control-treated mice ($p < 0.05$). (C) Treatment with sB4 significantly inhibited tumor weight compared with control-treated mice ($p < 0.05$). Data are expressed as mean \pm SEM. * $p < 0.05$

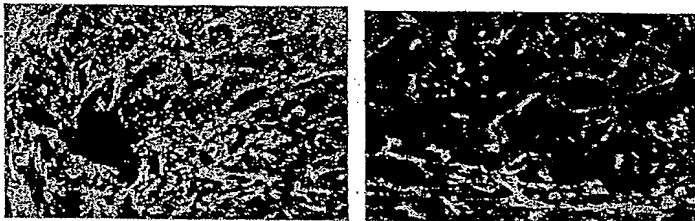
SCC15 Tumor histology



B16



Mcf-7



Soluble EphB4 causes apoptosis, necrosis and decreased angiogenesis in three tumor types, B16 melanoma, SCC15, head and neck carcinoma, and MCF-7 Breast carcinoma. Tumors were injected premixed with Matrigel plus growth factors and soluble EphB4 subcutaneously. After 10 to 14 days, the mice were injected intravenously with fitc-lectin (green) to assess blood vessel perfusion. Tumors treated with control PBS displayed abundant tumor density and a robust angiogenic response. Tumors treated with sEphB4 displayed a decrease in tumor cell density and a marked inhibition of tumor angiogenesis in regions with viable tumor cells, as well as tumor necrosis and apoptosis.

Figure 27

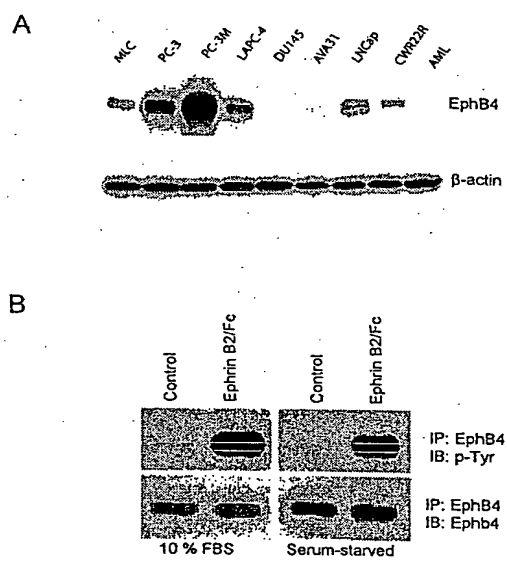
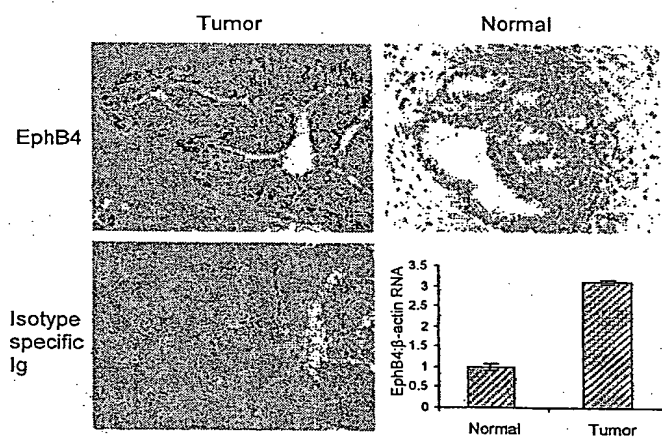


Figure 28



EPHB4 staining in prostate tissues array		
	negative	positive
Normal (n = 20)	17	3
Tumor (n = 32)	8	24

$P = 3.8 \times 10^{-5} \chi^2$ analysis

Figure 29

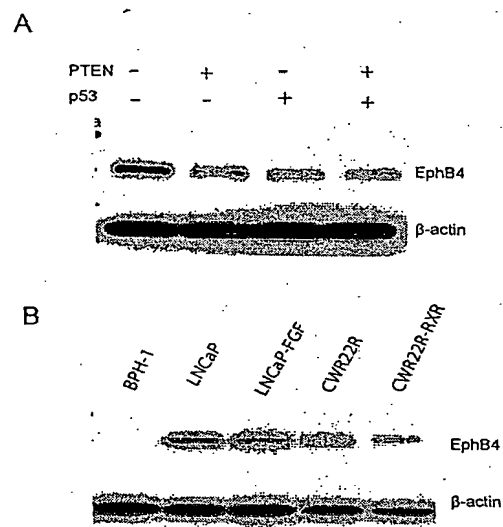


Figure 30

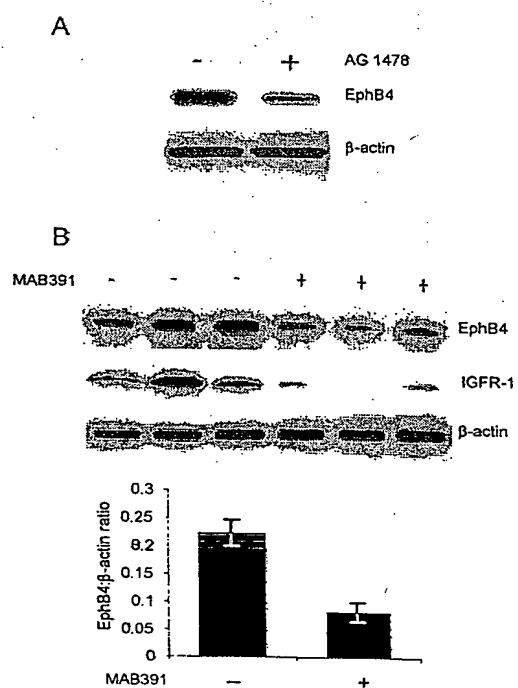


Figure 31

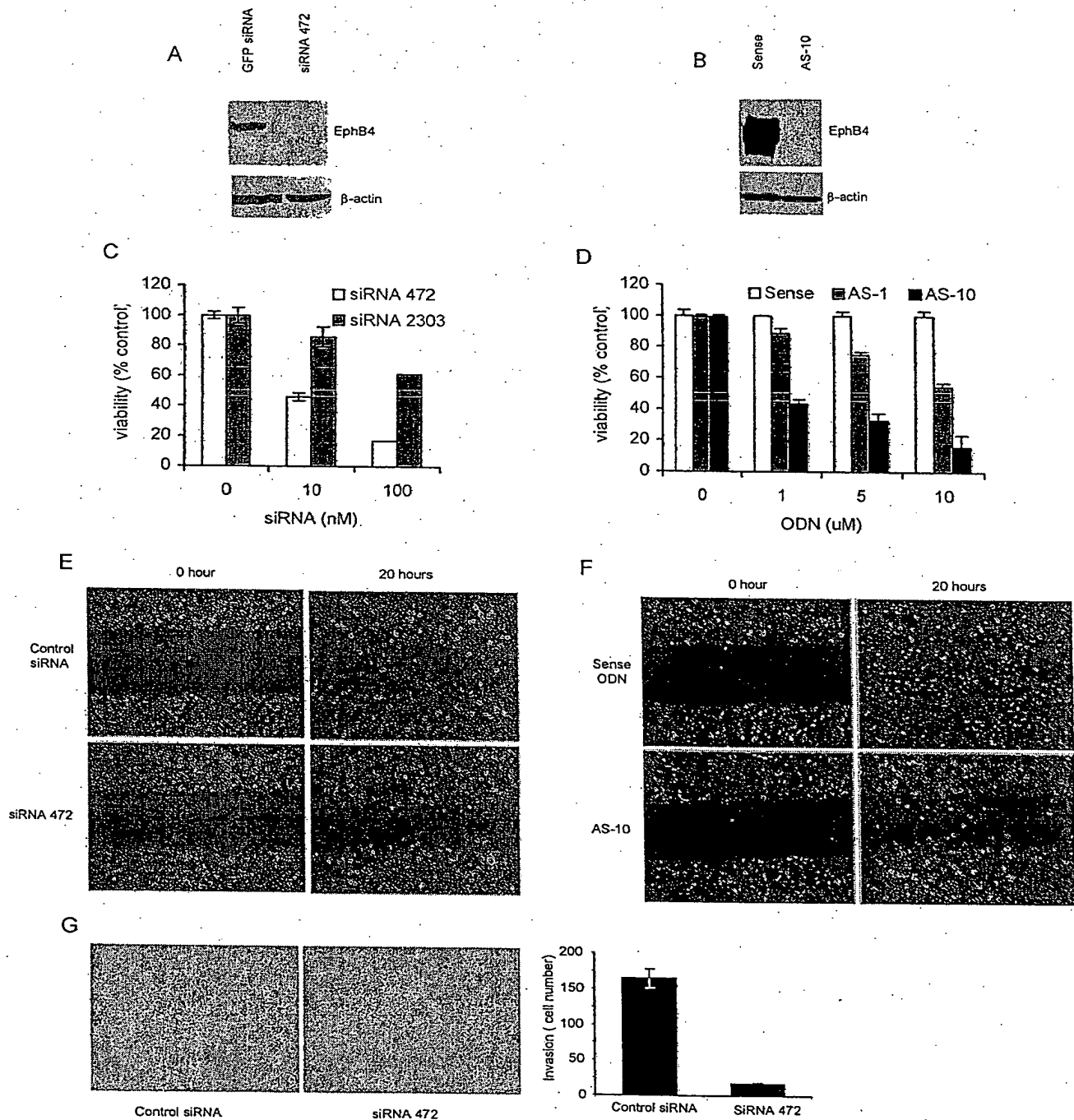
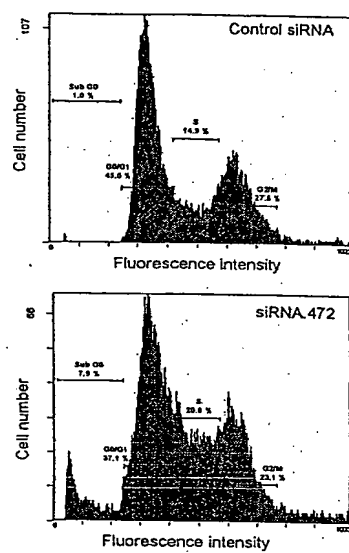
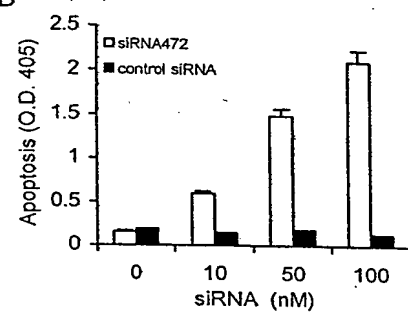


Figure 32

A

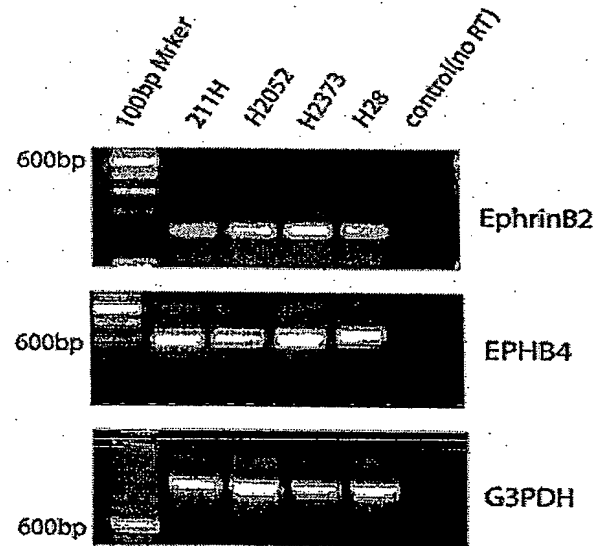


B



Figures and Legends

A.



B.

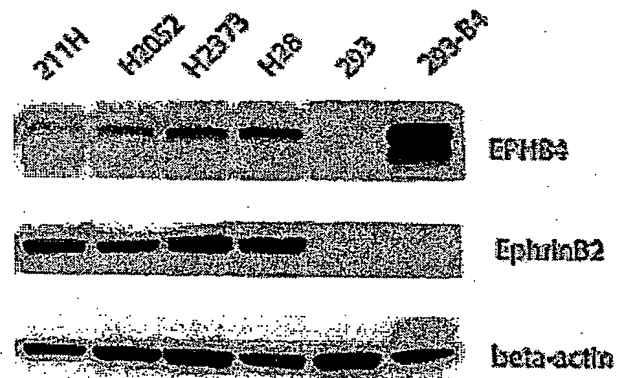


Fig. 33

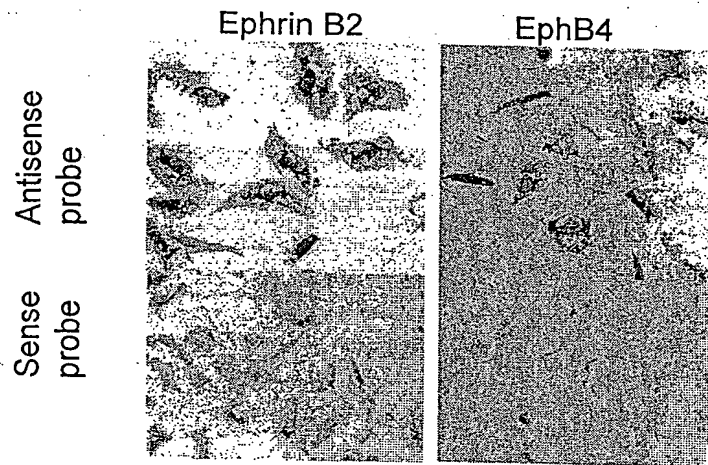


Fig. 34 Expression of ephrin B2 and EphB4 by in situ hybridization in mesothelioma cells. NCI H28 mesothelioma cell lines cultured in chamber slides hybridized with antisense probe to ephrin B2 or EphB4 (top row). Control for each hybridization was sense (bottom row). Positive reaction is dark blue cytoplasmic stain.

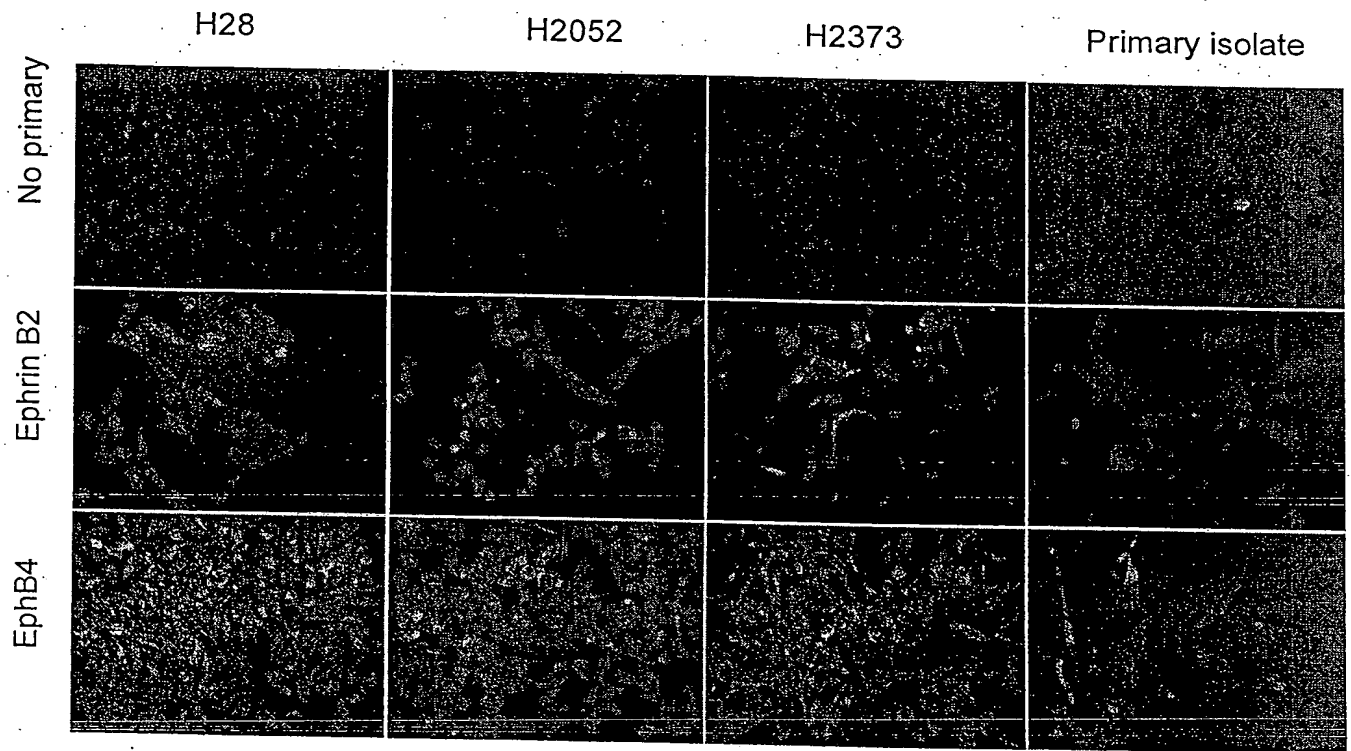


Fig. 35. Cellular expression of EphB4 and ephrin B2 in mesothelioma cultures. Immunofluorescence staining of primary cell isolate derived from pleural effusion of a patient with malignant mesothelioma and cell lines NCI H28, NCI H2373, and NCI H2052 for ephrin B2 and EphB4. Green color is positive signal for FITC labeled secondary antibody. Specificity of immunofluorescence staining was demonstrated by lack of signal with no primary antibody (first row). Cell nuclei were counterstained with DAPI (blue color) to reveal location of all cells. Shown are merged images of DAPI and FITC fluorescence. Original magnification 200X.

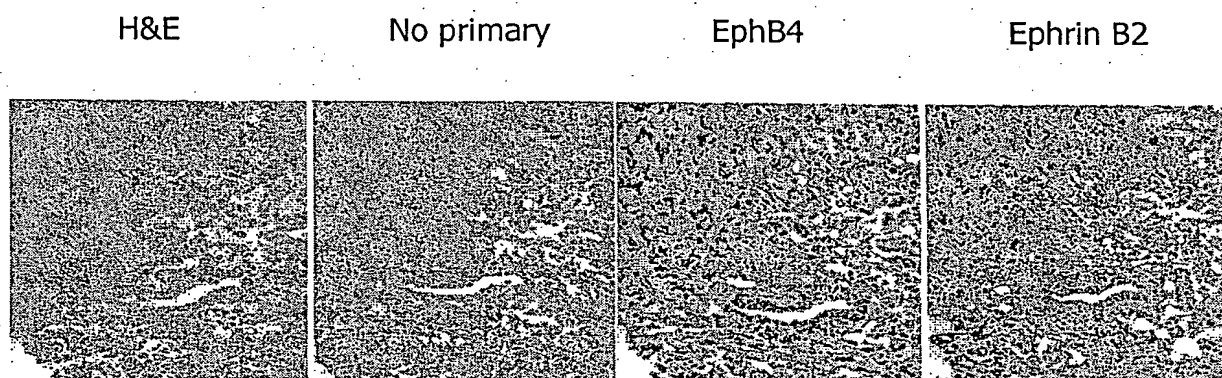
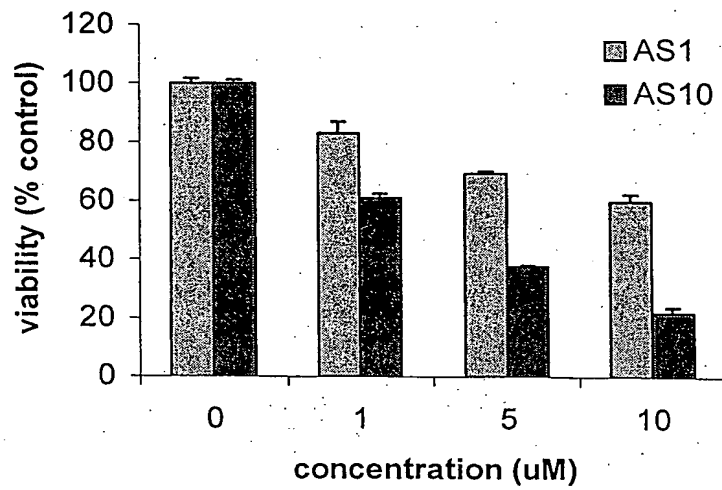


Fig. 36. Expression of ephrin B2 and EphB4 in mesothelioma tumor. Immunohistochemistry of malignant mesothelioma biopsy. H&E stained section to reveals tumor architecture; bottom left panel is background control with no primary antibody. EphB4 and ephrin B2 specific staining is brown color. Original magnification 200X.

A.

Effect of EPHB4 antisense ODN on the growth of H28 cells



B.

Effect of EPHB4 siRNA 472 on the growth of H28 cells

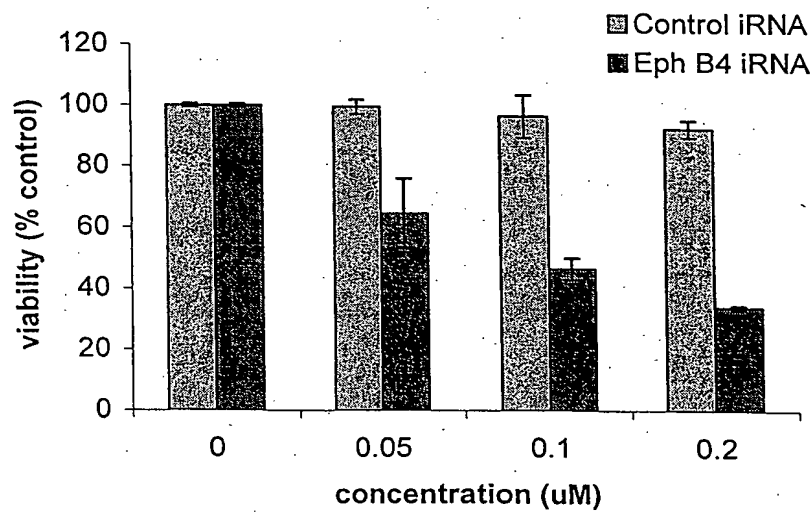
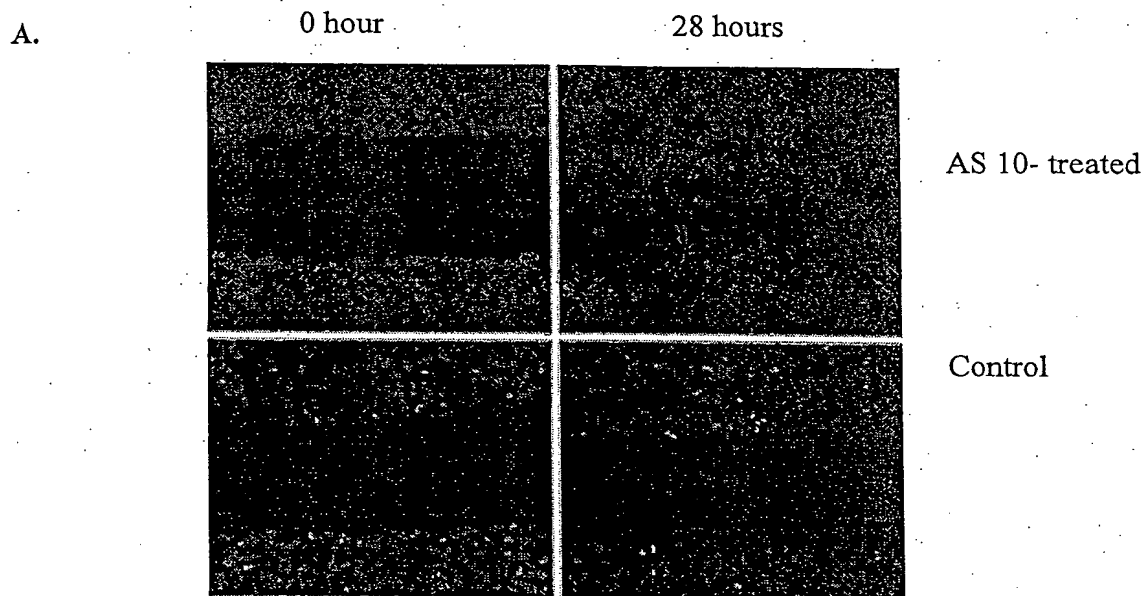


Fig. 37



B. Migration Study of H28 with siRNA472(Boyden Chamber)

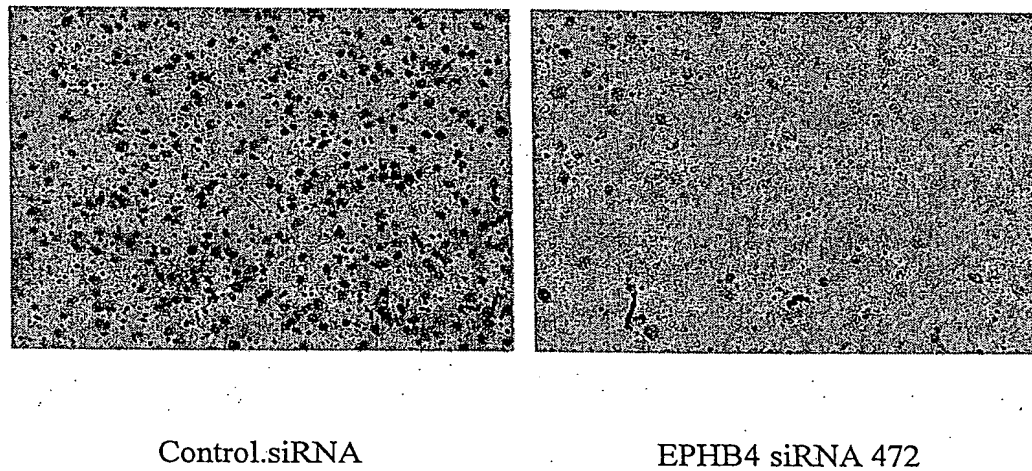


Fig. 38

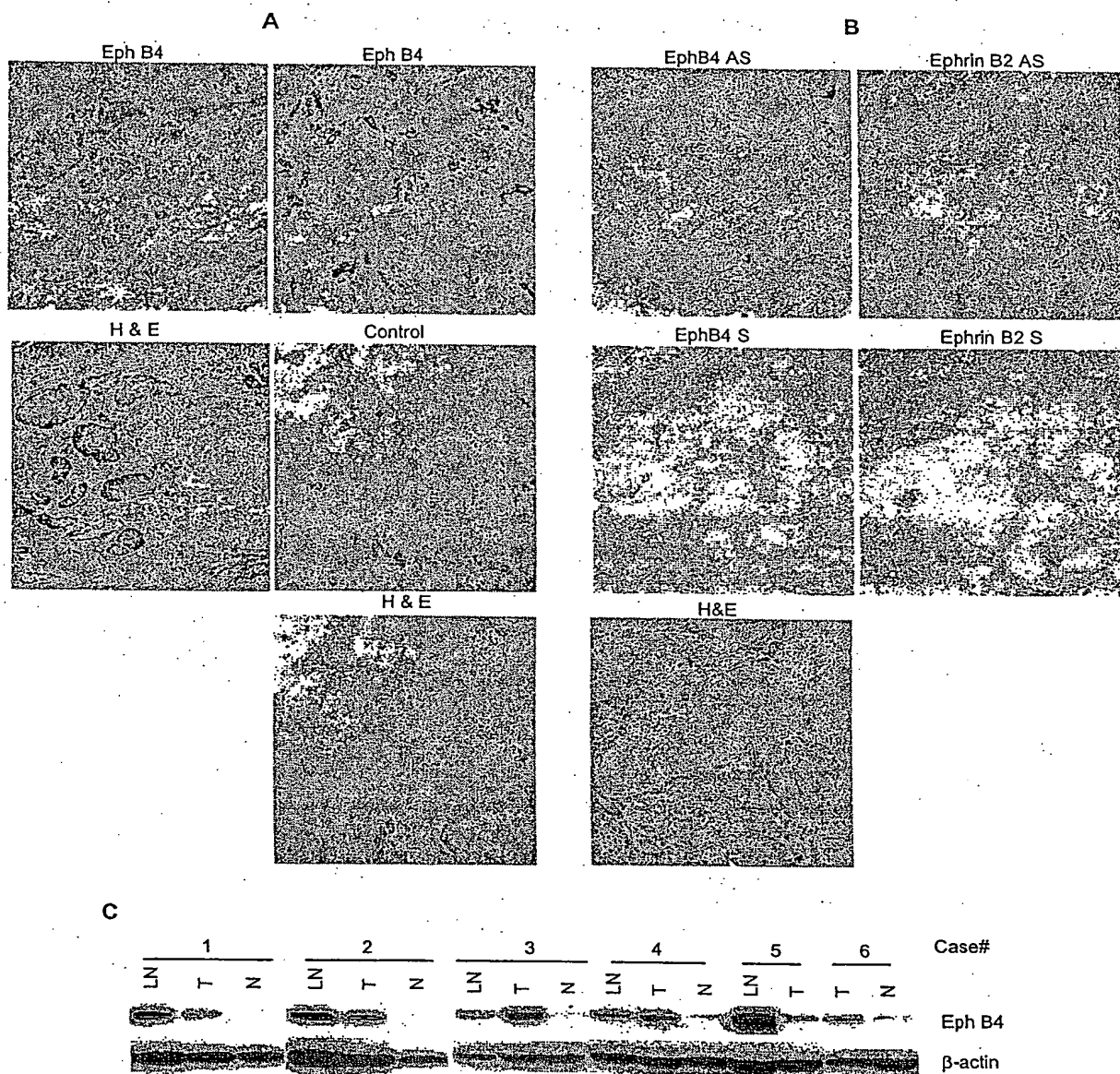


Fig. 39

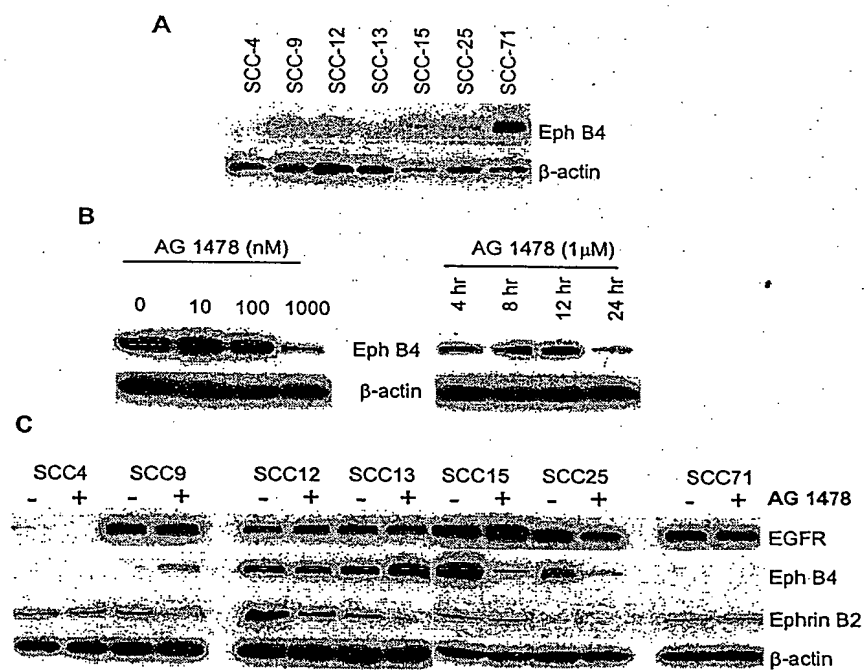


Fig. 40

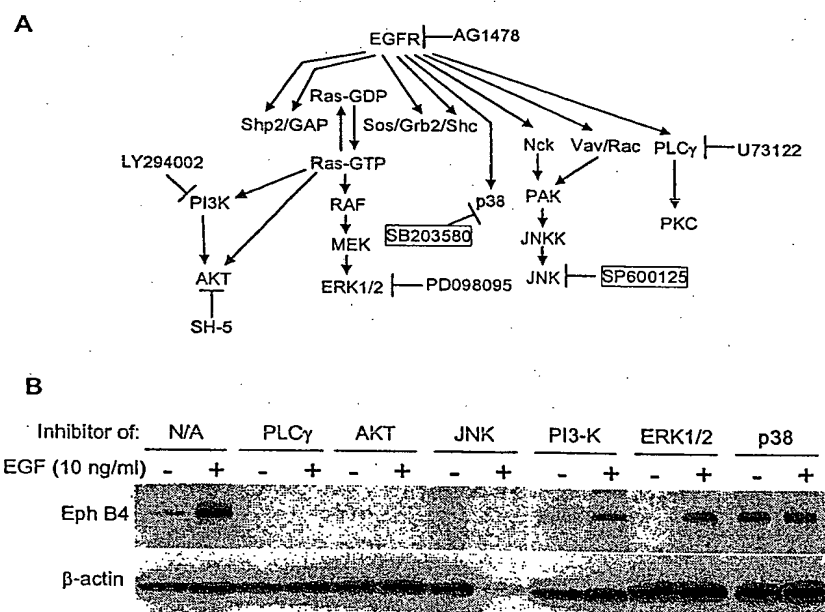


Fig. 41

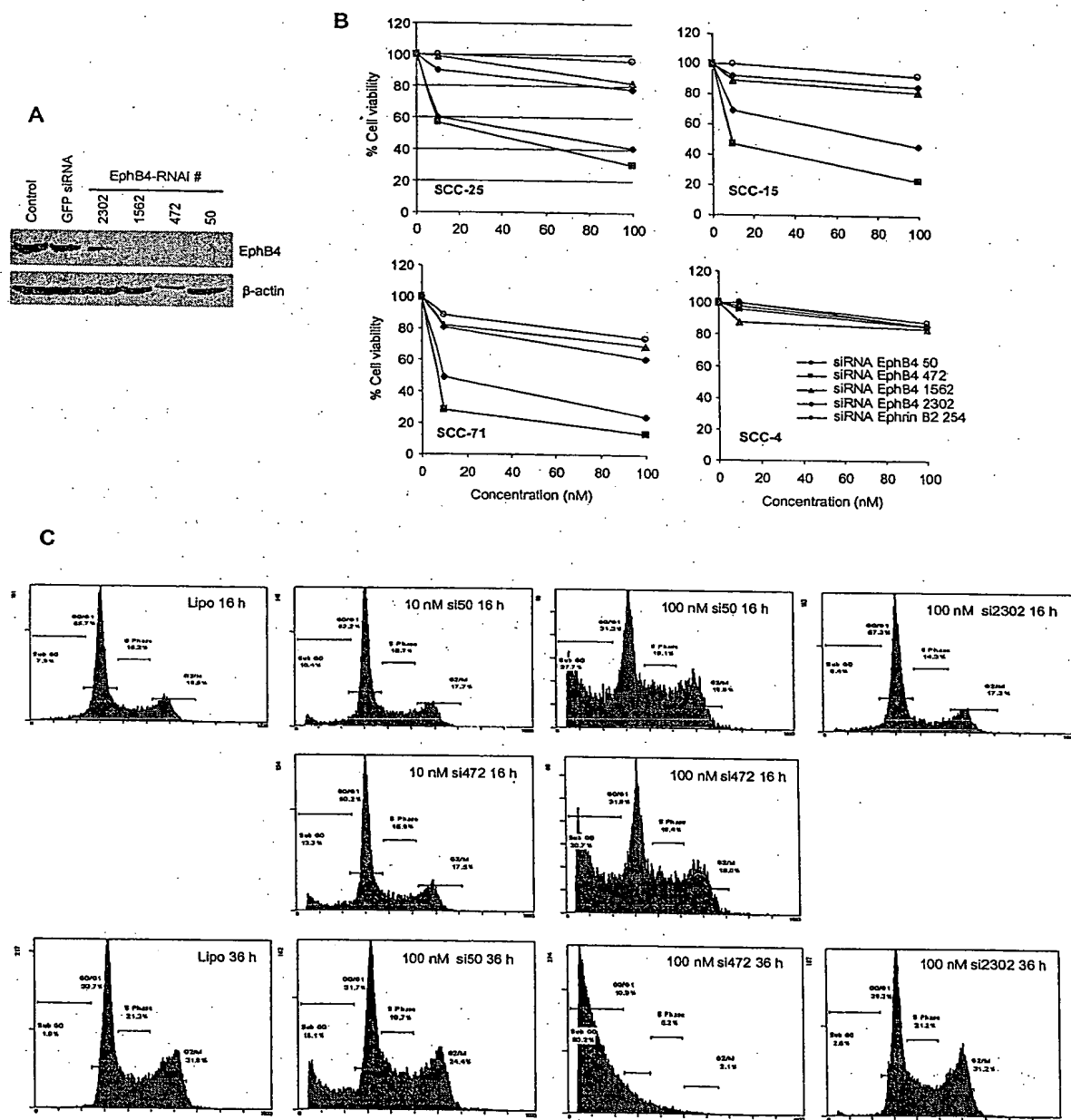


Fig. 42

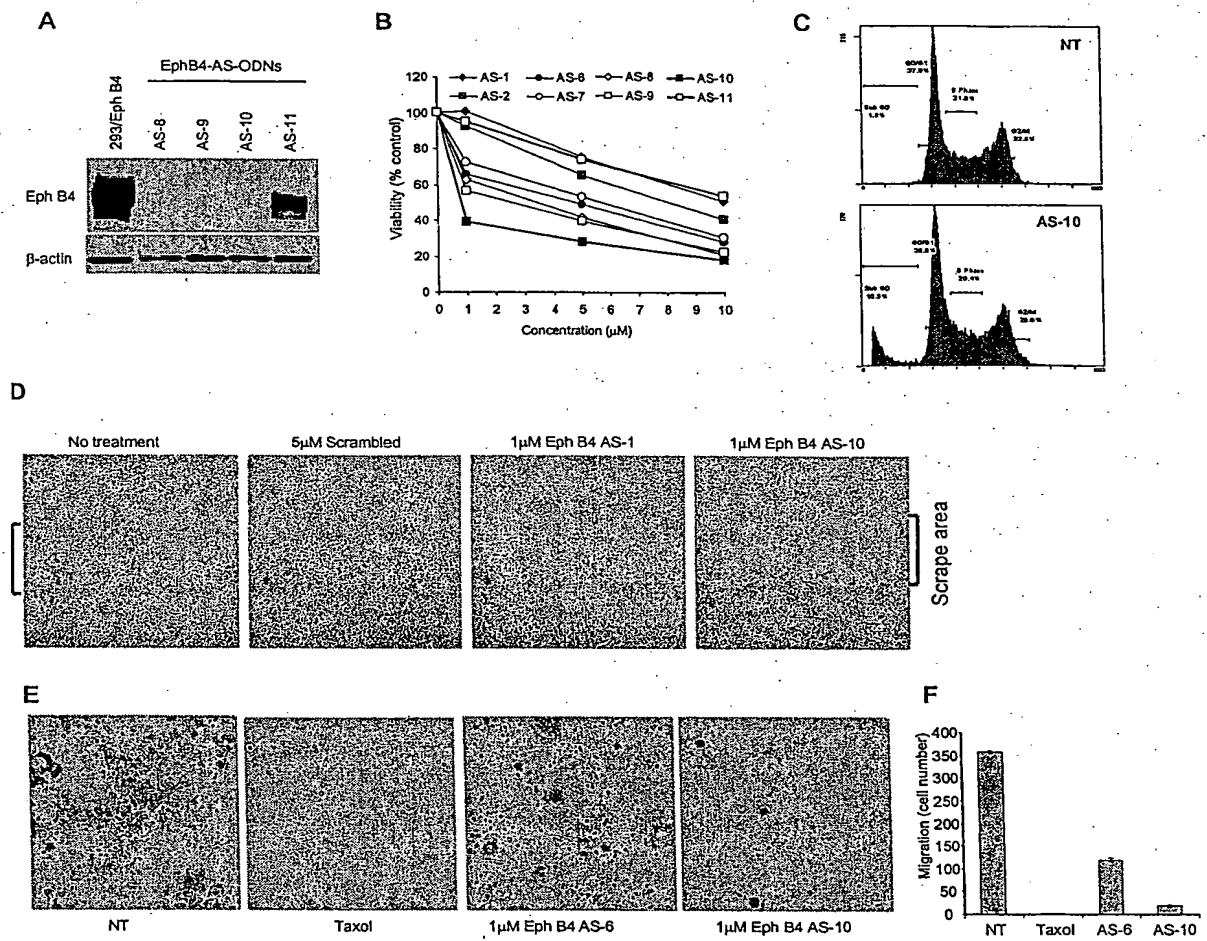


Fig. 43

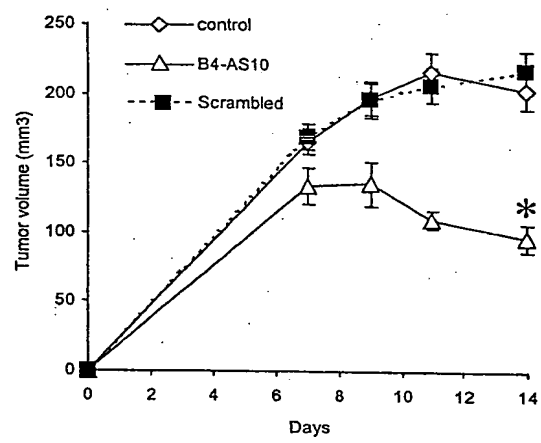
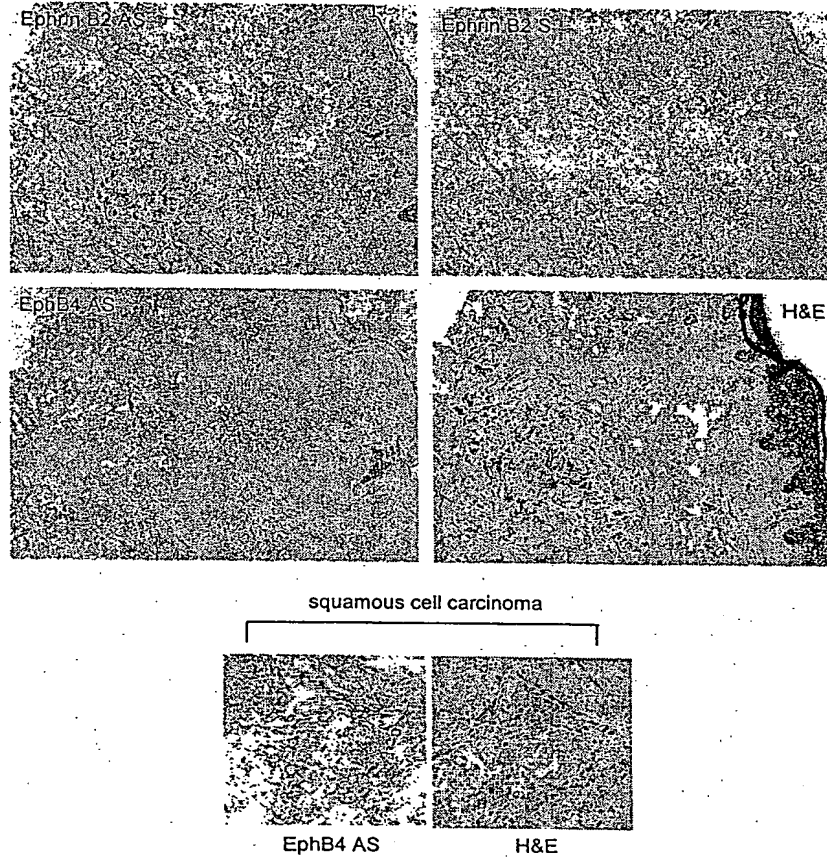


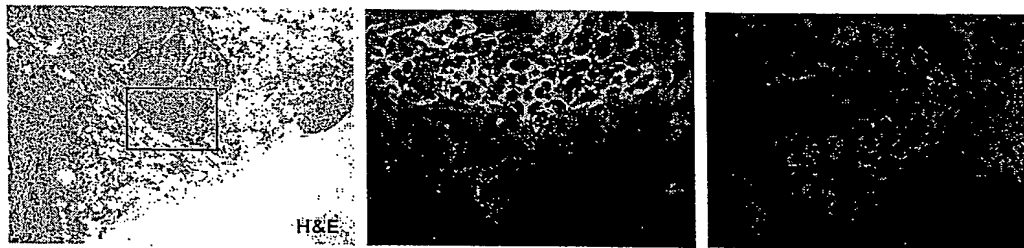
Fig. 44

Fig. 45

A



B



C

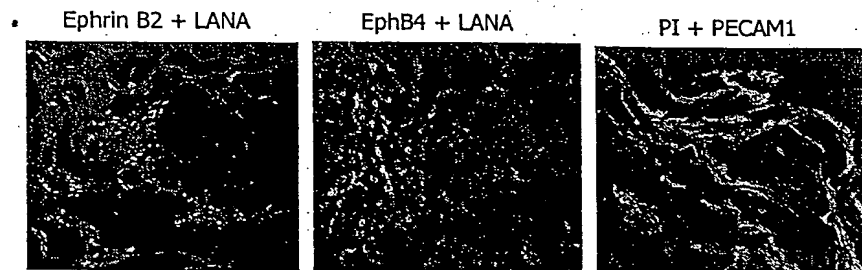


Fig. 46

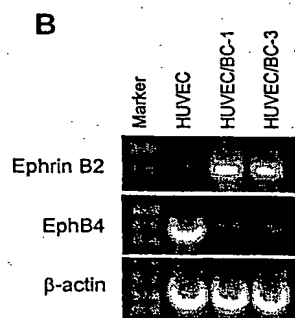
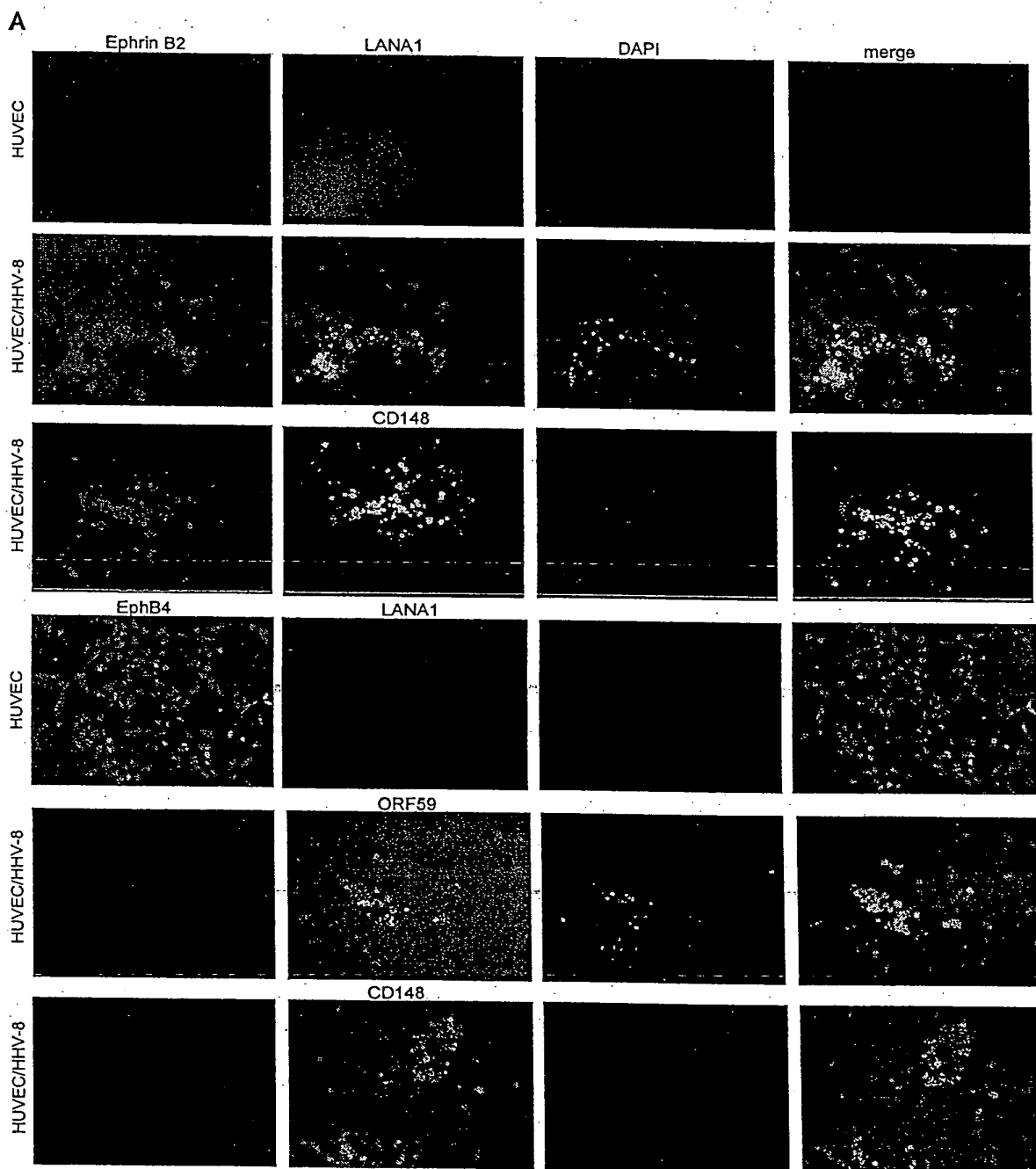


Fig. 47

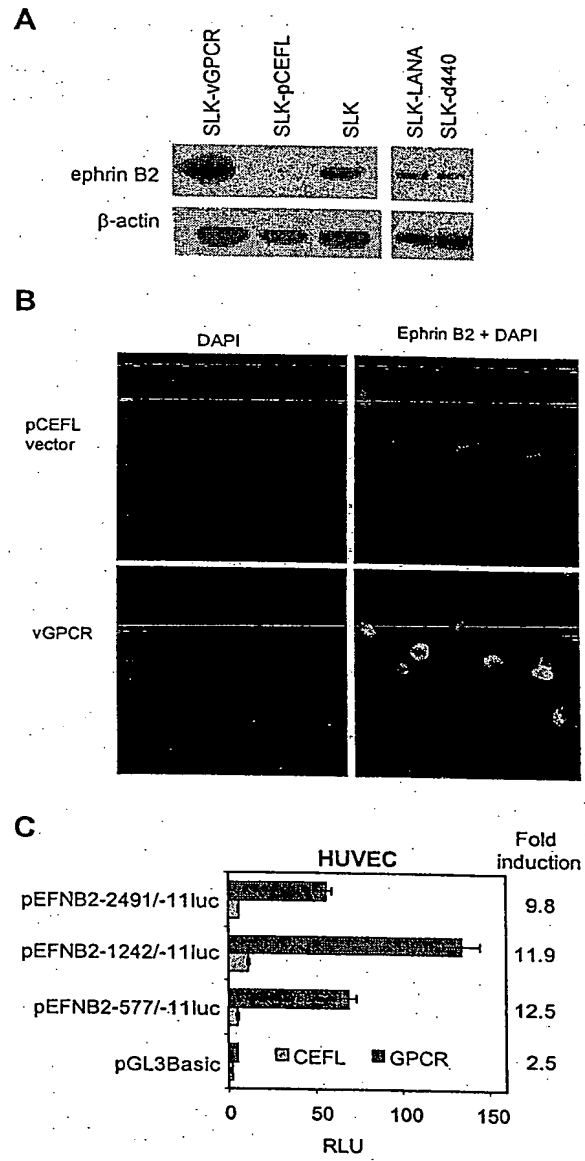


Fig. 48

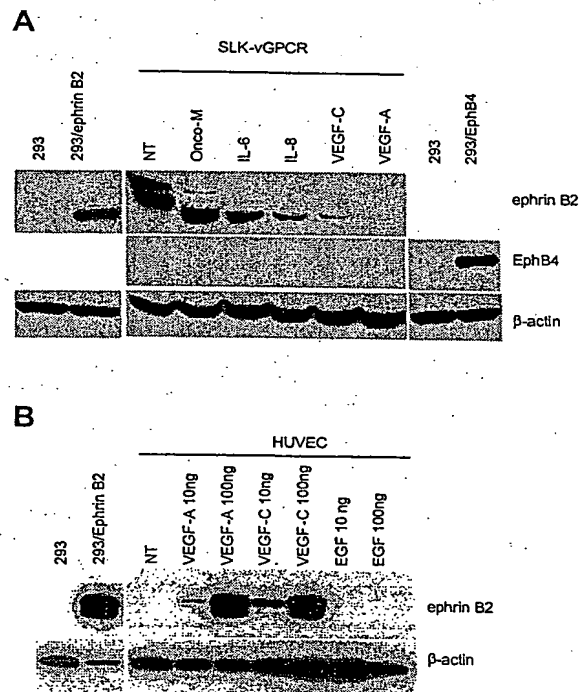


Fig. 49

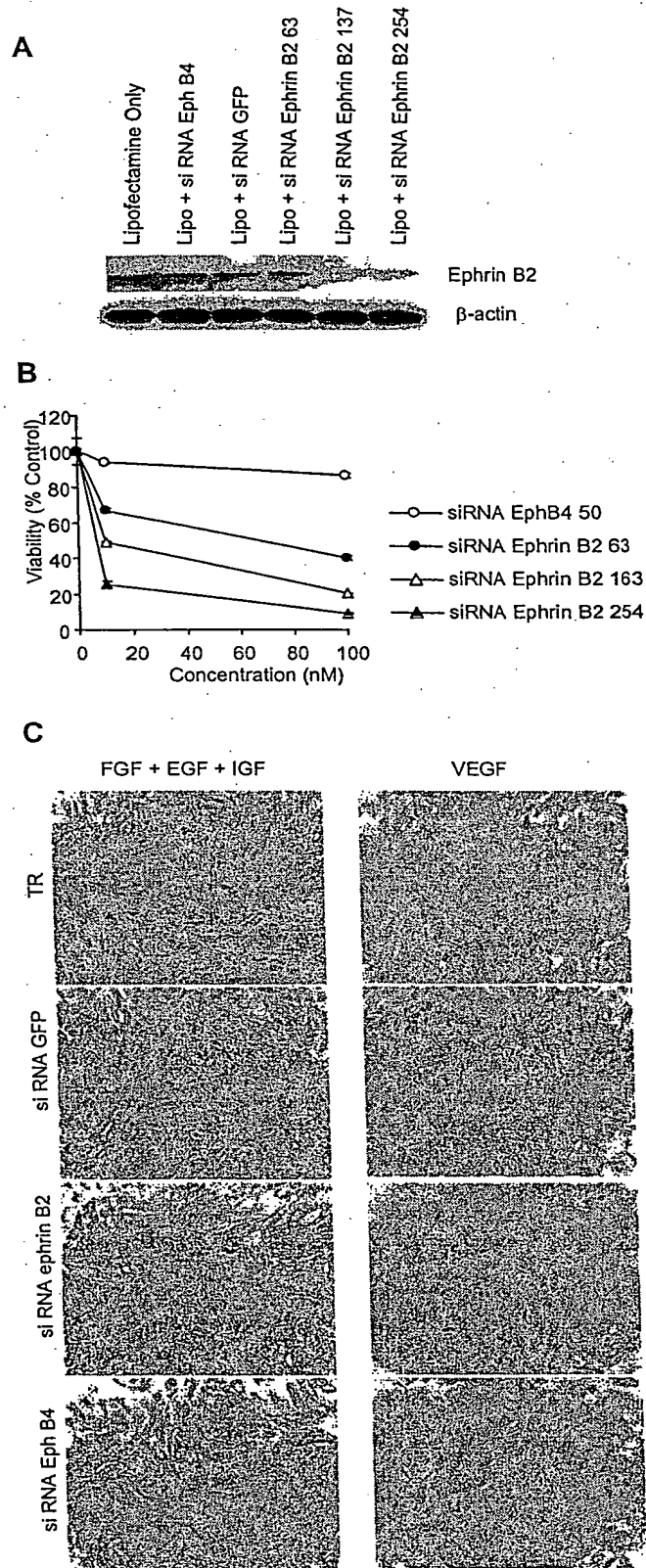


Fig. 50

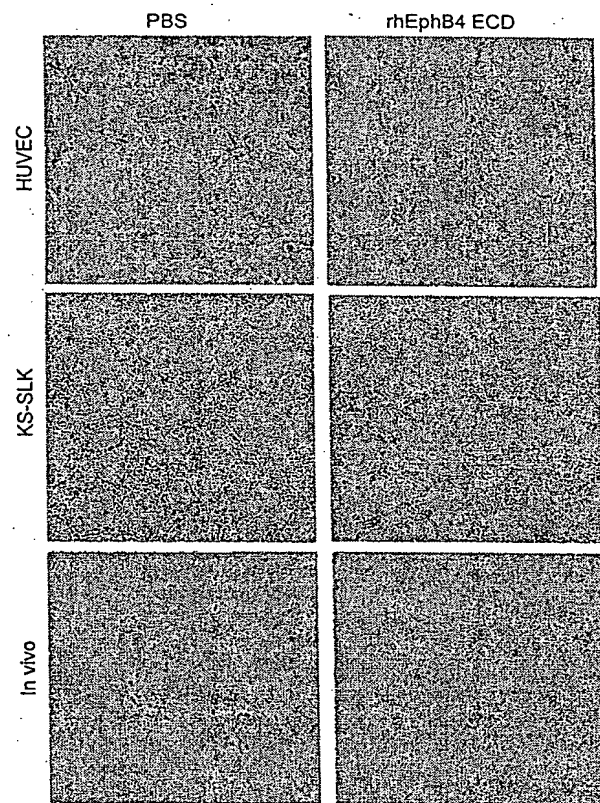
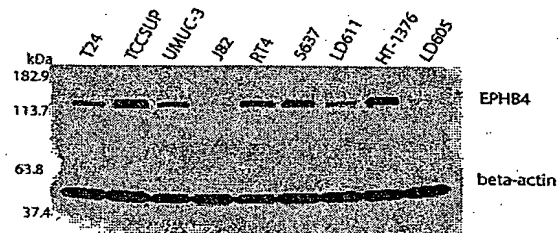


Fig. 51

Expression of EPHB4 in bladder cancer cell lines



Regulation of EPHB4 expression by EGFR signaling pathway

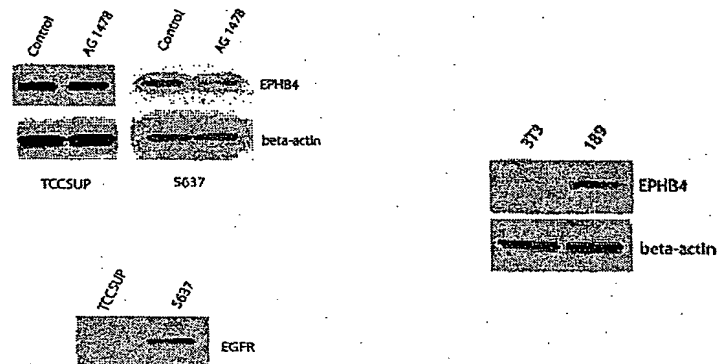


Fig. 52

Transfection of p53 inhibit the expression of EPHB4 in 5637 cell

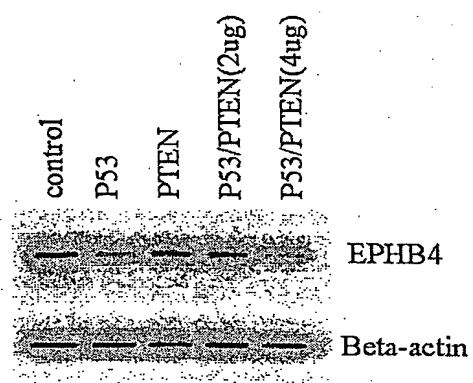
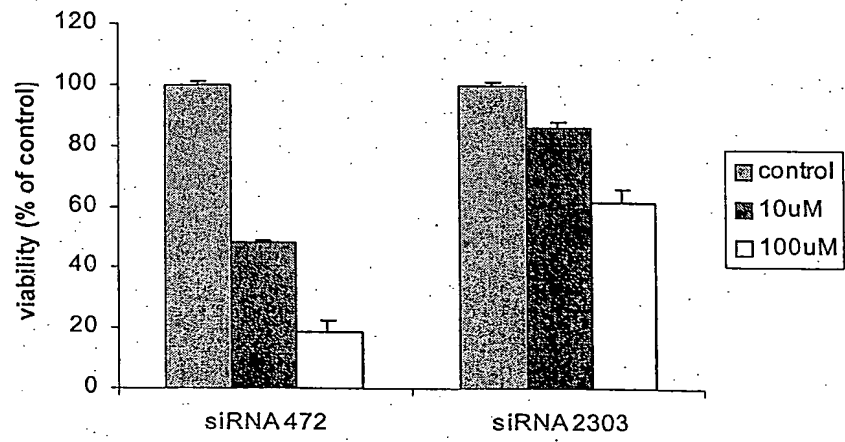


Fig. 53

Growth inhibition of bladder cancer cell line(5637) upon treatment with EPHB4 siRNA 472



Apoptosis Study of 5637 cells transfected with EPHB4 siRNA 472

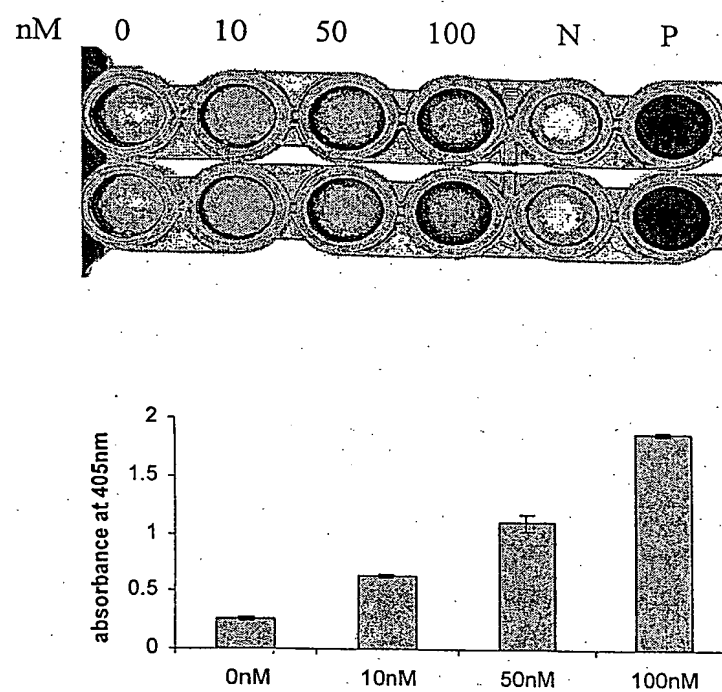


Fig. 54

Cell migration study of 5637 cell upon treatment with AS10(10uM)

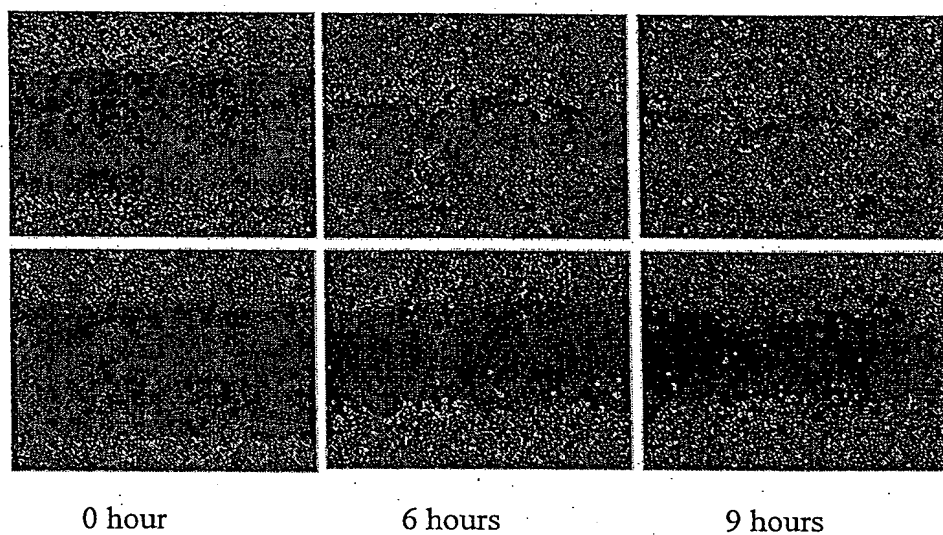
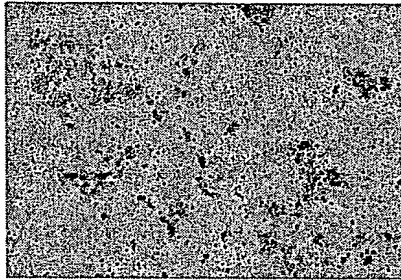
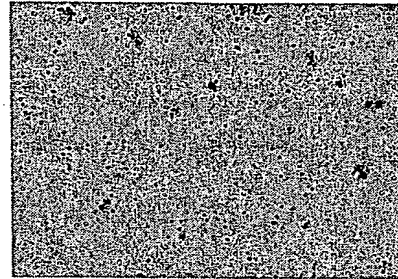


Fig. 55

Invasion study of 5637 cell transfected with siRNA 472 or control siRNA



Control



siRNA472

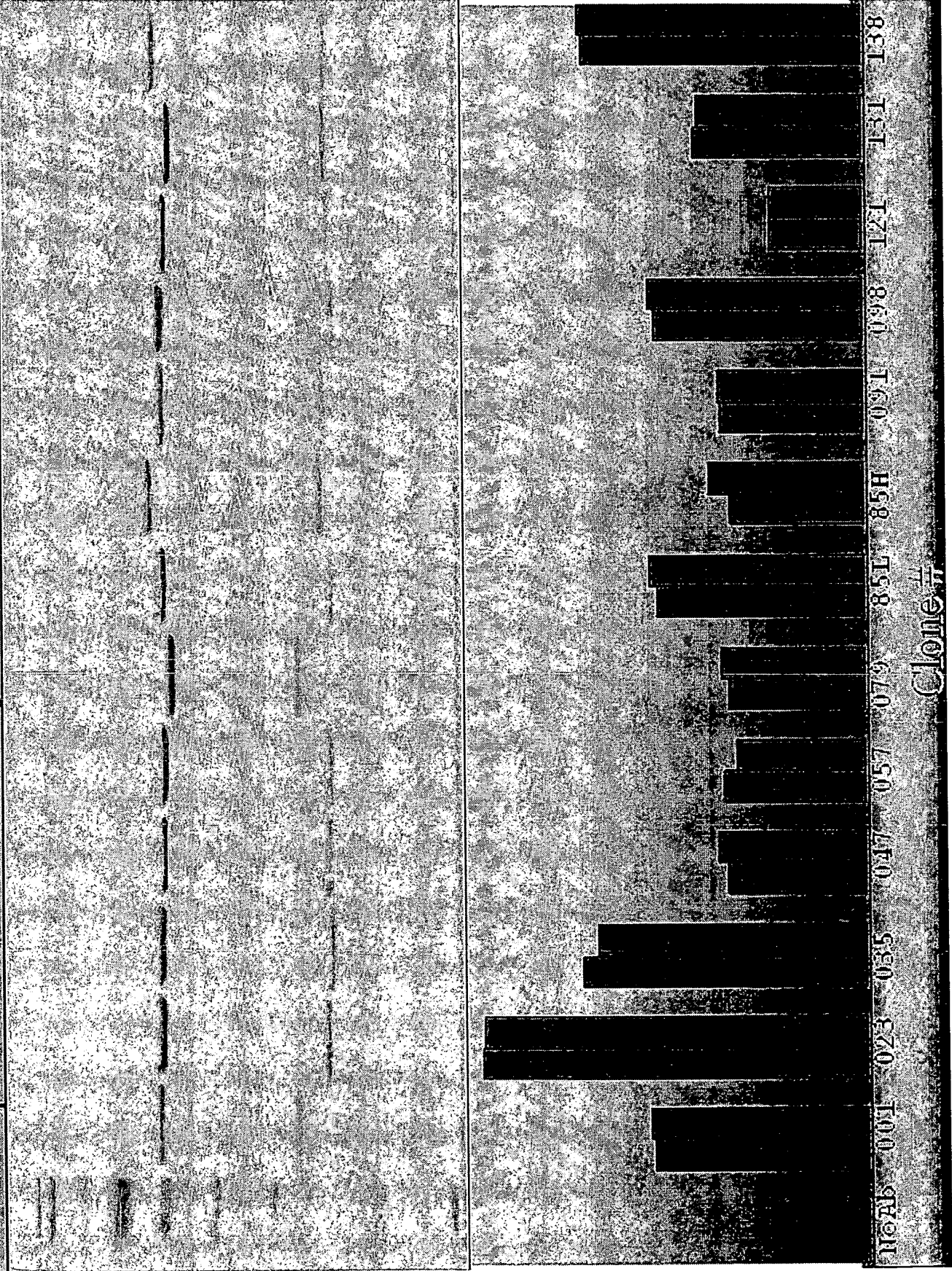
Co
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si
R
N
A4
72

Fig. 56

Fig. 57

Comparison of moABs by G250 and in Pull Down Assay



SCC15/MG xenograft Tumor regression

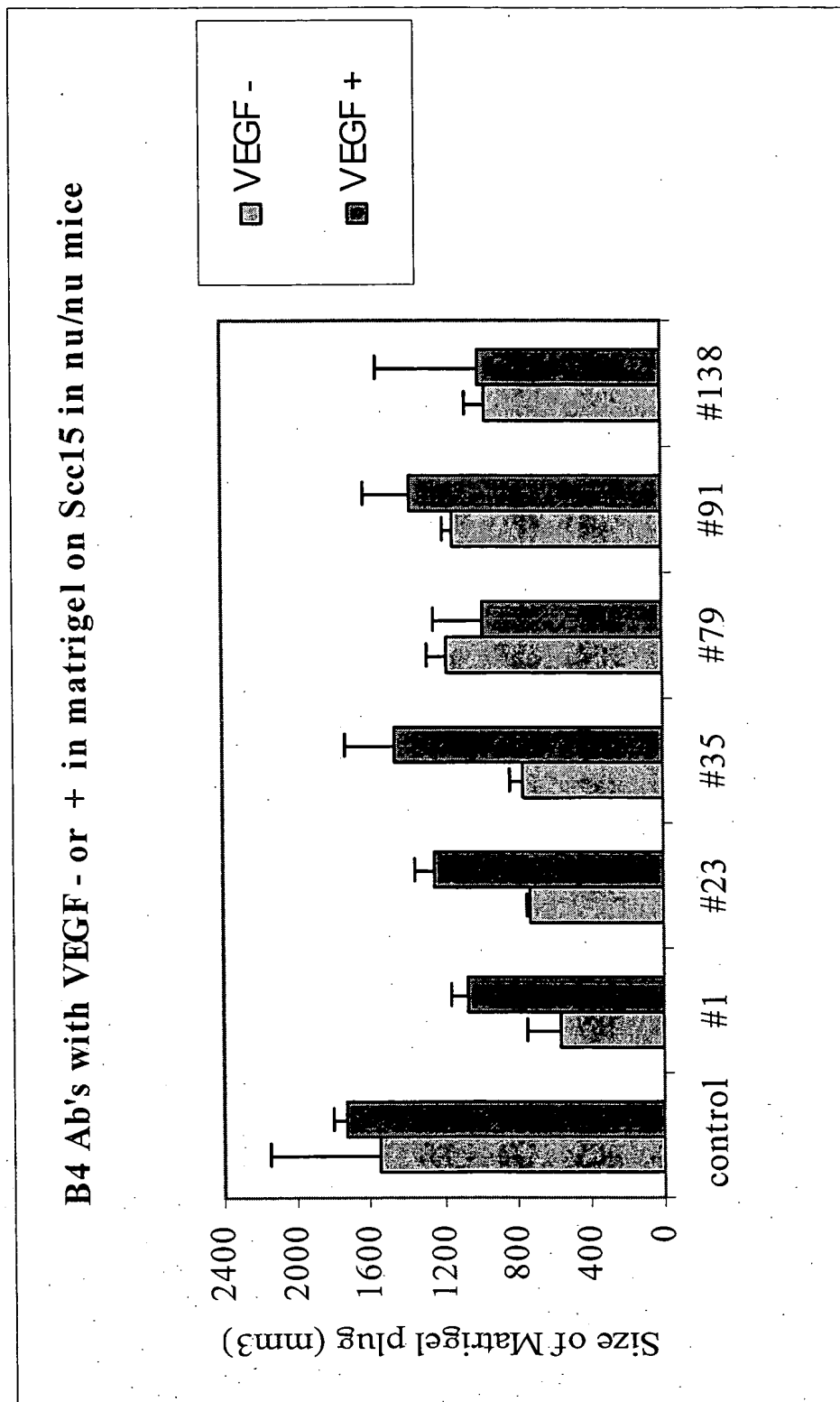


Fig. 59

Effect of B4 antibodies on SCC15 Tumor histology

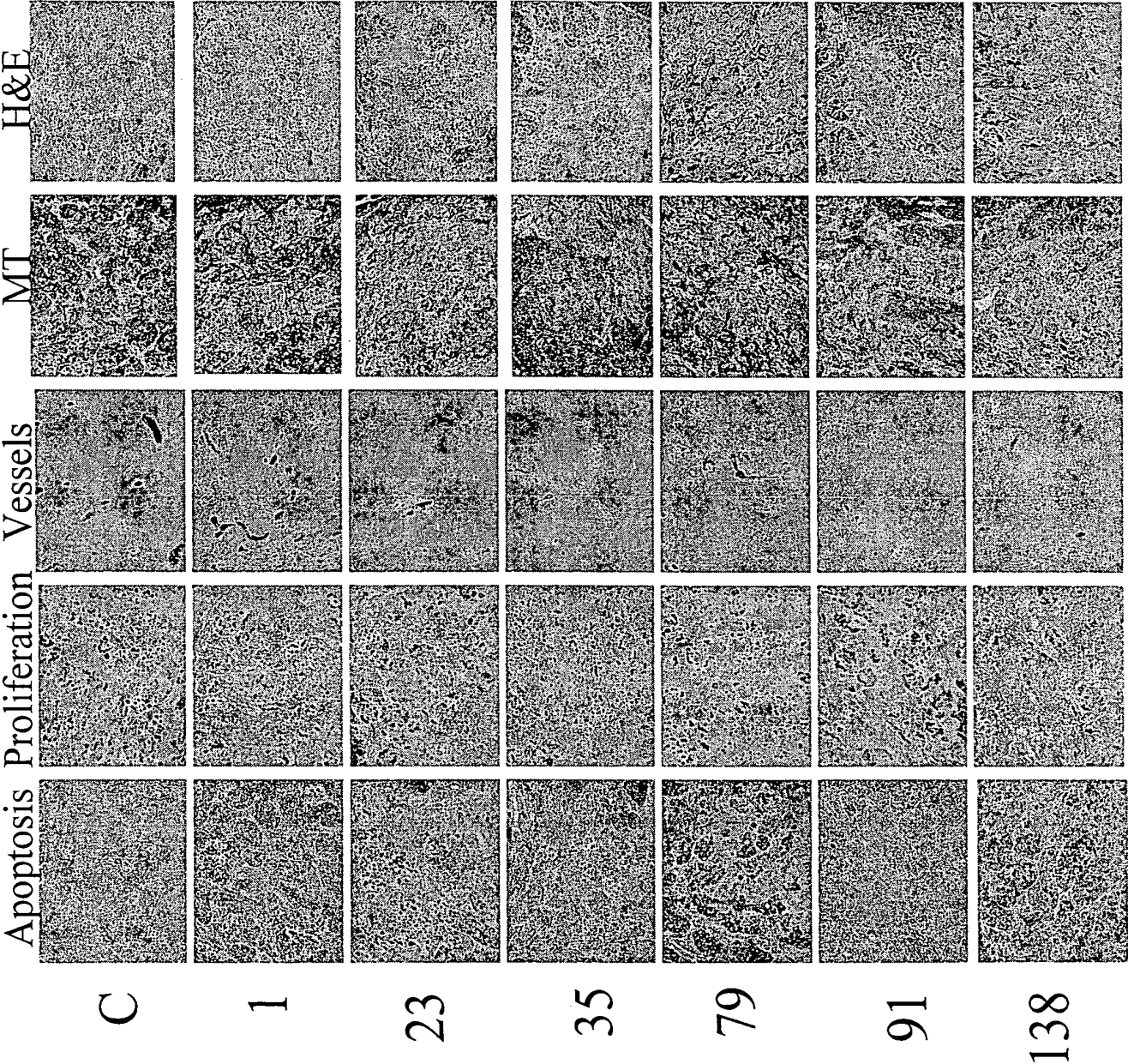


Fig. 60

SCC15/IP,SC B4 Ab treated xenograft Tumor regression

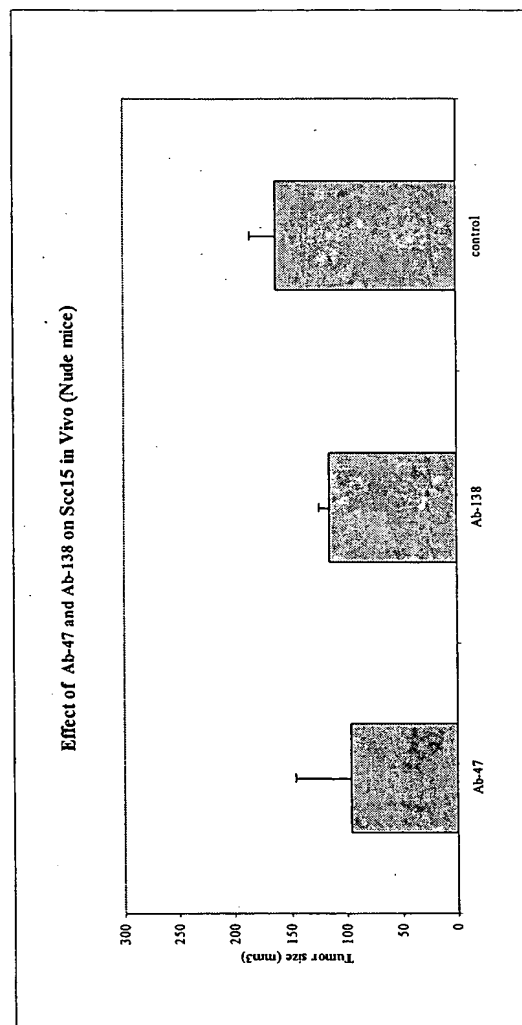
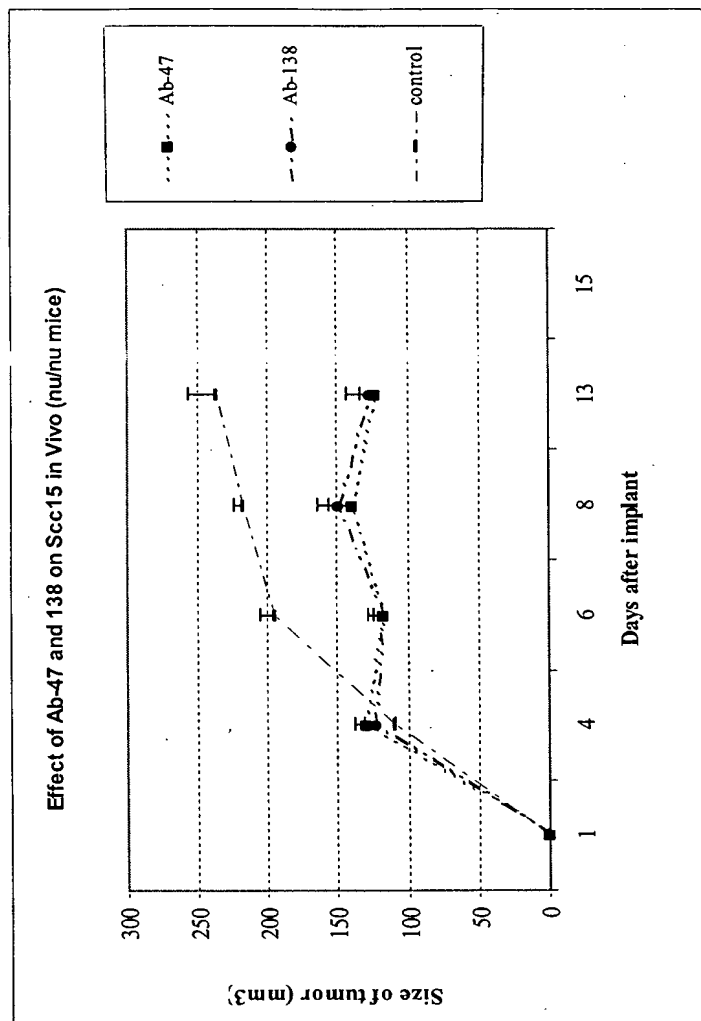


FIGURE 61 EphB4 gene

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Fig. 61(b)

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Fig. 61(c)

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9121 ccagctactc aagaggctga ggcaggagga ttgcttgagc ccaggagtgc gaggctgcag
9181 tgagctatga tcgcaccgct gcatgccagc ctgggtgaca gagcagtgtg agatcctctc
9241 tcaaaaataa tgaataagaa agagagggtg aggagctcgt aaagctgggc tggagagtta
9301 agtacaggaa ggccccaggt gggactgggg ccagagagaa tcagaaggaa ttctcgaac
9361 agccaggggg aaattgagac aagtgtagcc agcagaggaa gtgttggaaa agataaggga
9421 catggccagg ctgatcacia ggtcaggagt tcaagactag cctggccaac gtggtgaaac
9481 cccatgtcta ctaaaaataa aaaaattagc caggcatggt ggtgggcacc tgtaatccac
9541 ttgggaagca accagaagaa ttgcttgaac ccaggaggcg gaggttgag taagctgaga
9601 ctgcccact gcactccagc ctgggtgata gacacgact ccgtctcgaa aaaaaaatt
9661 ttttttaagt taaggacag agctaccatg cacaagggtt cctgtgtct ctgctctca
9721 cagtacctcc tgcagtgtct gacatccggg tgacgcggtc ctaccacagc agcttgagcc
9781 tggcctgggc tgttccccgg gcacccagtg gggctgtgct ggactacgag gtcaaatacc
9841 atgagaaggt aaggccatcc cccagccctg ggggtgggtg gcaatgggtt gtgctctcct
9901 ggctgggaca cctgggttgc aggcacctgg caggcatttg aattccagct ctgccatgga
9961 ttccctgggc agccttgggt aagccccttg gcctgtctga gcctcagact cttcatctat
10021 aaaatagtta ctgtaatagt taccagcagc tggacacagt ggctgaggtt ggggtgcggtg
10081 gctcacgcct gtaataccaa gcactttggg aggtgagggc gggcagaatg cttgagccta

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Fig. 61(d)

10141	ggagtttgag	accagcctgg	gcaacatggt	gaaacttcat	ctctataaaa	aacttaaaat
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10261	atcacaaggt	caggagtatc	gagaccatcc	tggctaacac	ggtgaaaccc	catctctact
10321	aaaaatacaa	aaaattagcc	aggcgcgggtg	gcaggcgcct	gtagtcccag	ctactcggga
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10441	gccactgcag	tccggcctgg	gcgaaagaac	aagactctgt	ctccaaaaaa	aaaaaaaaaa
10501	aaaaaaaaacg	caaaaaatac	ttaaaatgaa	aaaaattaga	ctgggcacag	tggtcctatgc
10561	ctgtaatccc	ggcacttttg	gaggccgagg	tgggtagaac	acctggggtg	aagagttcga
10621	gaccagcctg	gccacaaggg	tgaaatcccc	gtctctacta	caaatagcaa	aatcagctga
10681	gtgtgttg	ggggccctgt	aatcccagct	actcaggagg	ctgagacagg	agaatcactg
10741	gaacccaagt	gattctcgac	ttgaggtcga	ggctgcagt	agtcgtgttt	gcaccattgc
10801	attccagcct	gagaaagtga	gaccttgtct	taaaaaaaag	gaatgatatt	atgaatacag
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11041	ctgaagacgt	cagaaaaccg	ggcagagctg	cgggggctga	agcgggggagc	cagctacctg
11101	gtgcagggtac	gggcgcgctc	tgaggccggc	tacgggccct	tcggccagga	acatcacagc
11161	cagacccaac	tggatggtga	gcctggggaa	gggggtgagg	gtgggggtg	gaaagacccc
11221	caaagtctct	gggaagaccc	caggtctcca	aagtcaccatc	atcttttttt	tttttttttt
11281	tttttgagat	ggagtcttgc	tctgtccctc	aggctggagt	gcagtggcac	catctccgct
11341	cactgcaacc	tccgcctccc	ggattcaagc	cattctcctg	cctcagcctc	ccgagttagct
11401	gggattacag	gcgcctgcca	ccgcgcctgg	ccgatttttt	gtatttttag	tagagacggg
11461	gcttcaccgc	gttggccagg	ctggtctcga	actcctgacc	ttgtgattcg	ccgcctcgg
11521	cctcccgaag	tgtctgggatt	acaggcatga	gccactgcac	ccggtcaaa	tcctatcttc
11581	atgtccttct	tcctgtggat	cacatggcat	gccctagaga	ggagagaacg	taagatgtcg
11641	aaacccaaac	caacagctga	gttttgtgaa	gtctggcctg	cttcactctg	taccccagg
11701	ctggagcgca	gttgcctgat	caaagctcac	tgacacagcca	ggcacagtgg	ctcaccctgt
11761	aaccccgagca	ctttgggagg	ctgaagcagg	aggatcactt	gaggtcagga	gttcgagacc
11821	agtctgacca	gcatggtgaa	accgcgtctc	tactaaaaat	atagaagtta	gctgagcgtg
11881	gtggtgcaca	cctgtaatcc	cagctactcg	ggaggctgag	gcaggagaat	cgcttgaacc
11941	tgggaggtgg	aggttgcagt	gagctgagat	tgtgccagt	cactccagcc	tgggcaacag
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12061	tgacccctga	gctccccatt	ccccatccaa	caaaatggga	atatcatgaa	gcttcctgca
12121	gggcttttgag	gattggagggt	aacagggttat	ttttaatatg	ctaggccagt	ggctttcttt
12181	ttcttttcac	attttttttt	ttgagacgga	gtctcactct	gttgcccagg	ctggagtgcg
12241	gtggcgcat	ctcagctcac	cgcagctctc	acctcctgg	ctcgatctgc	tgacctcctg
12301	atccaccgcg	ctcggcttcc	cgaatgctg	ggactgctgg	cgtgagccac	cacgcccggc
12361	ctaacttttt	ctttttttta	agagacacgg	tcttttttat	caaccaggct	ggagtgcgg
12421	ggcaccatca	tagctcattg	cagcctacaa	ctcccagact	caaccaatcc	ttccacctta
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12541	tgttttgttg	agacagtttc	cctatgttgc	ccaggctgg	ctcaaattcc	tgacctcgag
12601	caatcctccc	gcacggcct	cccaaagtgc	tgggattaca	ggcatgagcc	gccacaccca
12661	gcattggacc	agtggctttc	taaaccttgt	aattttctgt	aatagcttta	ctgaaataca
12721	gttcccctgc	catacaattt	gcctgttcaa	agtgtacaat	cgatgacttt	tgatacattc
12781	acagaattgt	gcagtcacca	ccacaagtaa	ttttgggaca	ttttcagcac	cctcaaaaga
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12961	cgagcagaat	gttttcaagg	tttatgtatg	ttgtagtata	tatccgtggg	tttttttgg
13021	tgtggtttgt	tttttgtttg	ttttggaac	agggctctgc	tctgtcacc	aggtggagt
13081	cgactgggtc	aattacagct	cactgcagcc	tcaacctccc	aggctcaagt	gatcctccca
13141	cctcagcctc	ccaagcagct	gggactgtag	cgatgagcca	ccatgcccag	ctaatttttt
13201	ttggtatttt	ttgtaaagac	agggtttcac	catgtttccc	aggtgggtc	cgaactcctg
13261	agctcaggca	atccacccac	ctcagcctcc	caaagtgtctg	tgattacagg	catgagccac
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13441	ctcctacctc	agcctcctga	gtatctggga	ccacacgtgc	tcaccaccat	gcttggctaa
13501	ttattattat	tttttgatag	agacggggtc	ttgctatgtt	tcccaggctg	gtcttgaaca

Fig. 61(e)

13561	cctggcctca	cacaatcctc	ccacctcagt	atctcagagt	gctgggatta	caggcatgag
13621	ccactgctcc	tggccaatat	ttcattttctt	tttatggaga	cgtaataatc	agttgtatgg
13681	aaatagctga	ttttgttttt	tattgtatct	tttggatgaac	atthcaattg	tatcgacttt
13741	ttggataaaa	acctgaaaat	gtttcacctt	tagaacgttt	cattgaatgg	agattttttt
13801	gtggactctg	gtattttatac	tagaaccaaa	tcaaaaccac	tctggcggct	gggcatgcct
13861	aggctggttt	gagactagcc	tgtccaacct	ggtgaaagcc	catctctact	aaaaatacac
13921	aaattagccg	agcatgggtg	tacacacctg	taatcccagc	tactcaggag	gctgaggcag
13981	gagaatcgca	gaacccggga	ggcggagatt	gcagtgagct	gagattgctc	cactgcactc
14041	cagcctgggc	gacagagtga	gactgcgtct	caaaaaaaca	aacaaaaaat	tactctggca
14101	gtaagaaaag	atttcgaaac	tccctccctt	gccctgaggt	acttcagagg	agcctgctgg
14161	cccctggggg	agagtttgaa	accactgtt	tgttccctga	ccttgccctg	ttgtgtcctc
14221	tccctccacc	tgtccctgt	actggggacc	tgttctcagg	agatcacagt	tcattgtctc
14281	aagccggggc	tggggcctcc	tacaggacca	tcagtttctc	ctgatcagca	gccttctctt
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14461	gacaccacga	ggcccctgga	agccctcagt	tgatggccac	ctgcctgggt	gctacaggac
14521	aagcctttct	ggctgtcccc	agcctctttt	tacttgaaat	cttctccaat	ccctgtctct
14581	tcctttgggtg	tgtgtgcctc	ataaagatgt	gtgactcagt	ttaccttttg	ttcctttccc
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14761	gtggtggctc	ctatctataa	tccagcact	ttgggaggca	gaggtgggca	gatcacttga
14821	ggtcaggagt	tcgagaccag	cctggccaac	atgttgaaac	tccatctcta	taaaaaatac
14881	atcagtcagc	caggcatggt	ggtgggcacc	tgtaatccca	gctactcagg	aggctgaggc
14941	agaagaatca	ttttaacccg	ggaggcggag	attgcagtga	gccaagatcg	cgccactgcg
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15061	accacggaga	caggggtttg	gggctaaaag	ctatgagccg	agcctccgag	tccagtggga
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15241	cctacgtcaa	gattgaagag	gtgattgggtg	caggtgagag	ccgaaggctg	cccgggcacc
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15721	acctcctcca	gccttttctc	cttgggctaa	gcctgggtcc	tctgcctttt	ctttttttta
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16141	gttgtcatte	cttctttttt	tttttaattt	tgttttaatt	gaattttttt	tttttgagat
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16681	taggttgccc	aggctgggtc	gaactcctgg	cctcaagcga	gcctccctcc	tcagcctccc
16741	acagcactgg	gattgcaggc	atgagccact	gtgcctggcc	tgtcattcct	tcttttgaca
16801	aatattttact	gagtgccttc	tacgcaccgg	tcatcctccc	agtccccagg	aataaagcta
16861	tacacacggc	aaactggatt	tctcctcttg	gggagcagag	ggtctaattg	ggcaggggga
16921	ctgaaaatta	gcaagtaa	agacaggctt	tttaaaaaag	taaacaatc	atttcaaatg

Fig. 61(f)

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16981 tgaaaaaaag caaacgggggt ccttcatgca gatgtggcta gagaggaaag agaactgctt
17041 aattttatttg gtcacttttac cagatttttac tgactttttt ttttttttta actttattaa
17101 gctttttcttt tttcttgaga tggagtttcc atctgtcacc caggctggag tgcagtgggtg
17161 cgttcttggc tcaccgcaac gtccacctcc tgggttcaag tgattctcct gcctcagcct
17221 cctgagtagc ttggaattgc atggcatgca ccaccatacc cagctgatgt ttgtattttt
17281 agtagagaca gggtttcatc atgttgccca ggctgggtctt gaactcctgg gtcacagtga
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17581 ggctttgtac ctgggtatta tatatatttt atttatttat tttagaaaca aggtcttgcc
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17821 ctgggtctca actcctggac tcaagcgatc ctccctcctt aacctctcaa agtgcctggga
17881 ttacaggcgt gagccaccac gcctgctgat tattatattt tcgagcctct ctaaactctg
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18121 gagatggaag cctgctgtcg ccaggctgg agtgcagtgg cacaatctcg gctcactgca
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20281 attgtaagca atgtgttgtg atactgtagc aagagctgag aaaacttggg aaaagagaaa
20341 ggaggaaggc tcacctgagg gagttggggg gcttgcccta caggtgagtt gtgaggtggg

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Fig. 61(g)

20401	tctggaagtg	acagatgcag	tttaggaagt	ggacgggagg	ctgggtacgg	tgactcaaca
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20521	agaccagcct	gggcaacata	gtgggaacct	atctctacta	aaaattaaaa	aattatccag
20581	gcataatggc	acatgcctat	tgttccagct	actcaggagg	cttgccctgag	cccaggagggt
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20701	cctgtctcta	aaaaaaaaag	atgtggatgg	gagggggaac	ggtgggtggg	ctgtcctcac
20761	caagccccc	ccctatctgc	tctccagcta	aacgacggac	agttcacagt	catccagctc
20821	gtgggcatgc	tgcggggcat	cgctcgggc	atgcggtacc	ttgccgagat	gagctacgtc
20881	caccgagacc	tggctgctcg	caacatccta	gtcaacagca	acctcgtctg	caaagtgtct
20941	gactttggcc	tttcccgatt	cctggaggag	aactcttccg	atcccaccta	cacgagctcc
21001	ctggtaatgc	tgggggtaat	actgggtgtg	agcttcttag	ggccagggtg	gcagggcagg
21061	ttggaaaggt	gggaggctga	gggtttggca	gccctgctcc	agggagaggga	tacaggagca
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21361	ctgggcgaca	gagcaagacc	ctgtctcaaa	agaacagtgg	ccagggtgtg	tggctcacgc
21421	ctgtaaatcc	agcacttttg	gaggetgagg	caggaggatc	gcctgagggt	aggagttcga
21481	gaccagcctg	gccaacatgg	gaaaacctg	tcgctactaa	aaatacaaaa	ttagctgagg
21541	gtggtgtgtac	acgcctgtaa	tccgagctac	tcaggaggct	gaggtaggag	aaccagttga
21601	acccgggagg	cggagtttca	gtgagccaag	atcgaccac	tgcactccaa	cctgggcaaa
21661	cagagttgga	gagtaggagg	cttggggcct	gagctagggg	gaaaaagcag	aggcgagggtg
21721	gggactgggg	ggcagtgtgc	tgggtctggg	gagtccctca	gtgagtcccc	cagctcacct
21781	tttctccttt	ttctgcaggg	aggaaagatt	cccatccgat	ggactgcccc	ggaggccatt
21841	gccttccgga	agttcacttc	cgccagtgat	gcctggagtt	acgggattgt	gatgtgggag
21901	gtgatgtcat	ttggggagag	gccgtactgg	gacatgagca	atcaggacgt	aagtgtcccc
21961	tggtccatcc	aaactttcct	cgagtgttct	ctcacctggg	atttgggggtg	aagggtgggt
22021	tcccagagag	tcatactgc	tgggttcttg	agaccatgga	gatgacaaaa	aggagaattg
22081	atctttgtat	caaagagttg	agatacaggg	ccaggcctag	tggctcaage	ctgtaatccc
22141	agcacttttg	gaggccaagg	tgggcagatc	acctaaaggt	aggagttcaa	gaccagcctg
22201	gccaacatgg	tgaacccccg	tctctaaaaa	aatacaaaaa	attagcccag	catgatgggc
22261	gggtgcctgt	aatcccagct	actcaggagg	ctgagacagg	ataatcgctt	gaacccaggga
22321	acagaggttg	cagtgtgctg	agatcacgcc	attgctttcc	agcctgggca	actgagcgag
22381	actctgtctt	aataaataaa	taaaagagtt	gggtacagca	tatttgggtc	gcagaaggat
22441	gcagagatgg	agggcagggt	tgagaggtaa	catgtctgta	tcatagccca	agagctgctg
22501	gggccttcag	ccacagagag	cttcaactcc	ggctaggagg	attcctggat	ctgttaatttt
22561	ttggggggct	gtggctccta	tcctaccatc	ttccaagtca	ccatttctctg	ggcctgttag
22621	catctttgct	tttctgggac	agcctcacc	agagcttctt	ccctcttttc	cagggtgatca
22681	atgccattga	acaggactac	cggctgcccc	cgcccccaga	ctgtcccacc	tcctccacc
22741	agctcatgct	ggactgttgg	cagaaagacc	ggaatgccc	gccccgcttc	ccccagggtg
22801	tcagcgccct	ggacaagatg	atccggaacc	ccgccagcct	caaaatcgtg	gcccgggaga
22861	atggcggtg	aggactgcag	agaatgggcc	ctccttccc	ctctctgccc	ccactccttg
22921	cccagaagtg	tccgttcatt	ggtgttgggt	gggagggcct	ctgtccgcct	ctgtaaggct
22981	gggttccacc	tcctcccccg	gacctggg	tggtactcag	cattcctccc	catccttgcc
23041	ccctagggcc	tcacaccctc	tcctggacca	gcggcagcct	cactactcag	cttttggtc
23101	tgtgggagag	tggcttcggg	ccatcaaaat	gggaagatac	gaagaaagtt	tcgcagccgc
23161	tggctttggc	tccttcgagc	tggtcagcca	gatctctgct	gagtaagcag	tggcaggagc
23221	tggagtgggg	ctgggagagc	ggggcagctg	gagtcaggcc	cacggggctc	ccaggggctt
23281	ttgggggtcag	cttcgggtgc	caatgcgtgc	ttcttgcact	gcgctcatgc	catgcttaga
23341	agggccccag	aggagcagtc	acagccccat	ggagctgagg	acccaaggac	tctttggggc
23401	cagcctgccc	gcctcacctc	ctcctgccat	cacagccctg	ggccatcgcg	cttcgcctc
23461	tcacttctag	ctatctttgt	gcactctatc	gcattccagg	cccggctctc	acggtaacaa
23521	tgtgtcaact	cgggttctct	ttttccaacc	ataaaaggag	aagattgggc	taggttttgg
23581	agatcctctt	cagcttttat	gtgaaatggg	tttatgatcc	cttgccctccc	aaaggctgcg
23641	tatccccact	tggcctttgt	ctgctactcc	ccctttctgc	cttcccgttc	ctctcccaag
23701	atctcctctc	accccagggt	gaataacaga	aatagaagga	atagaaatct	gaaggccggg
23761	catggtggct	catgcctgta	atgccagcac	tttgggaggc	cgagggtggg	agatcacttg

Fig. 61(h)

```

23821 aggttaggag ttcgagacca ttgtggacaa cttggtgaaa ccttatgtct actaaaaata
23881 caaaaattag ctgggcatgg tgggtgcgtgc ctgtaatacc agctactgag gaggctgagg
23941 caggagaatc gcttgaaccc gggaggtgga ggttgcagtgc agccgagatc gcaccactgc
24001 actccagcct ggatgacaga gtgaaattcc atctcaaaaa aaaaaaaaaa aaaaaaaaaaag
24061 aaatgtgaag gccaggtggt ggctcacgcc tghtaatctca gcactttggg aggctcaggt
24121 ggaccgattg cttgagccca ggagtttgag agcagcctgg ccaaaatagc aaaaccccat
24181 ctctacaaaa caaaaacaaa aaaattagct gggcatggtg gtgctgcct gtggtcccag
24241 ctactcagga ggctagagcc agaggttctc aggccagtct gcccctgccc cagggggcct
24301 gggcacatcc ctccctaatt cttcccagcc tctctctgac ccagggggcc tctctccct
24361 tttttccctc tatctcagcc tccagccatc agcaacctcc tcttccctc caccagctc
24421 ttcctctccc acttcggcct tttctttctc acactccatt tccctctacg gcaatctgtg
24481 cagcctcttc cccagctctc attttgcggg cttttctctc ttttctttcc ttccctggca
24541 cccaagccaa aggcctgcc tctggcctcc agccctacce ccttctgcgg ttgcacagaa
24601 ggatggctgc ccagctctta aaaaaactgc ccgggaactg ttgacatctg ttctccctcc
24661 cccgctggct tttctgattg gcttacaatc ctgaggctag gaccgtctca ggagccaaga
24721 gaggagagcg gccacaggga acctagggtc tcaccaagct ctcccttcc tctgcaggga
24781 cctgctccga atcggagtca ctctggcggg acaccagaag aaaatcttgg ccagtgtcca
24841 gcacatgaag tcccaggcca agccgggaac ccgggtggtg acaggaggac cggccccgca
24901 gtactgacct gcaggaactc cccaccccag ggacaccgcc tccccatttt ccggggcaga
24961 gtggggactc acagaggccc cagccctgtg gcccgcgtgg attgcacttt gagcccgagg
25021 ggtgaggagt tggcaatttg gagagacagg atttgggggt tctgccataa taggagggga
25081 aaatcacccc ccagccacct cgggggaactc cagaccaagg gtgagggcgc ctttccctca
25141 ggactgggtg tgaccagagg aaaaggaagt gcccaacatc tcccagctc cccaggtgcc
25201 cccctcacct tgatgggtgc gttcccgcag accaaagaga gtgtgactcc cttgccagct
25261 ccagagtggg ggggctgtcc cagggggcaa gaaggggtgt cagggcccag tgacaaaatc
25321 attgggggtt gtagtcccaa cttgctgctg tcaccaccaa actcaatcat ttttttccct
25381 tgtaaatgcc cctccccag ctgctgcctt catattgaag gtttttgagt tttgtttttg
25441 gtcttaattt ttctcccgt tccctttttg tttcttcgtt ttgtttttct accgtccttg
25501 tcataacttt gtgttgagg gaacctgttt cactatggcc tcctttgccc aagttgaaac
25561 aggggcccac catcatgtct gtttccagaa cagtgccttg gtcacccac atccccggac
25621 cccgcctggg accccaagc tgtgtcctat gaaggggtgt ggggtgaggt agtgaaaagg
25681 gcggtagtgt gtggtggaac ccagaaacgg acgccggtgc ttggaggggt tcttaaatta
25741 tatttaaaaa agtaactttt tgtataaata aaagaaaatg ggacgtgtcc cagctccagg
25801 ggtgatgggg gtgatggact agatttctaa ggagagtggg gctgggtagg gagggctttg
25861 tggctgaccg agaggtgtca gaggtctgga ggctgcaggg ctgtaggggc tggaaacttg
25921 ttatcagccc cagggtatgt ttgaggtggt ggggtggggg ccgagcgaga tgaatcattc
25981 gcagctgctt ctaacgtctc

```

FIGURE 62. EphB4, mRNA.

```

1  ctcgccccgg cggcgcgagc agagccactc cagggagggg gggagaccgc gagcggccgg
61  ctcagcccc  gccacccggg gcgggacccc gagggccccg agggacccca actccagcca
121 cgtcttgctg cgcgcccggc cggcgcggcc actgccagca cgctccgggc ccgcgcggcg
181 cgcgcgcggc acagacgcgg ggcacactt  ggccgcggcc cccggtgccc cgcacgctcg
241 catgggcccc cgctgagggc cccgacgagg agtcccgcgc ggagtatcgg cgtccaccgg
301 cccagggaga gt cagacctg ggggggcgag ggcccccaa  actcagttcg gatccatccc
361 gagtgaggcg gtcccatgga gctccgggtg ctgctctgct gggcttcgtt ggccgcagct
421 ttggaagaga ccctgctgaa cacaaaattg gaaactgctg atctgaagtg ggtgacattc
481 cctcaggtgg acgggcagtg ggaggaactg agcggcctgg atgaggaaca gcacagcgctg
541 cgcacctacg aagtgtgtga cgtgcagcgt gccccgggcc agggccactg gcttcgcaca
601 gggtgggtcc cacggcgggg cgccgtccac gtgtacgcc  cgctgcgctt caccatgctc
661 gagtgccgtg ccctgcctcg ggctggggcg tcctgcaagg agaccttcac cgtcttctac
721 tatgagagcg atgcggacac ggccagggc  ctcacgccag cctggatgga gaacccctac
781 atcaaggtgg acacgggtgg cgcggagcat ctcacccgga agcgccttgg ggccgagggc
841 accgggaagg tgaatgtcaa gacgctgctg ctgggaccgc tcagcaaggc tggcttctac
901 ctggccttcc aggaccaggg tgcctgcatg gccctgctat ccctgcacct cttctacaaa
961 aagtgcgccc agctgactgt gaacctgact cgattcccgg agactgtgcc tcgggagctg
1021 gttgtgcccc tggccggtag ctgctggtg  gatgccgtcc ccgcccctgg cccagcccc
1081 agcctctact gccgtgagga tggccagtgg gccgaacagc cggtcacggg ctgcagctgt
1141 gctccgggg  tcgaggcagc tgaggggaac accaagtgcc gagcctgtgc ccagggcacc
1201 ttcaagcccc tgcaggaga aggttcctgc cagccatgcc cagccaatag ccactctaac
1261 accattggat cagccgtctg ccagtgcgc  gtcgggtact tcggggcacg cacagacccc
1321 cggggtgcac cctgcaccac ccctccttcg gctccgcgga gcgtggtttc ccgctgaac
1381 ggctcctccc tgcacctgga atggagtgcc cccctggagt ctggtggccg agaggacctc
1441 acctacgccc tccgtgccc  ggagtgccga cccggaggct cctgtgcgcc ctgcggggga
1501 gacctgactt ttgaccccgg cccccgggac ctggtggagc cctgggtggg ggttcgaggg
1561 ctacgtcctg acttcacct  tacctttgag gtactgcat  tgaacgggg  atcctcctta
1621 gccacggggc ccgtcccat  tgagcctgtc aatgtcacca ctgaccgaga ggtacctcct
1681 gcagtgtctg acatccgggt gacgcggtcc tcaccagca  gcttgagcct ggccctgggt
1741 gttccccggg caccagtggt ggctgtgctg gactacgagg tcaaatacca tgagaagggc
1801 gccgaggggt ccagcagcgt gcggttcctg aagacgtcag aaaaccgggc agagctgcgg
1861 gggctgaagc ggggagccag ctacctggtg caggtacggg cgcgctctga ggccggctac
1921 gggcccttcg gccaggaaca tcacagccag acccaactgg atgagagcga gggctggcgg
1981 gagcagctgg ccctgattgc gggcacggca gtctgggtg  tggctcctgg cctggtggtc
2041 attgtggtcg cagttctctg cctcaggaag cagagcaatg ggagagaagc agaatactcg
2101 gacaaacacg gacagtatct catcggacat ggtactaagg tctacatcga ccccttctac
2161 tatgaagacc ctatgagggc tgtgagggaa tttgcaaaag agatcgatgt ctcctacgtc
2221 aagattgaag aggtgattgg tgcaggtgag tttggcgagg tgtgccgggg gcggtcaag
2281 gccccaggga agaaggagag ctgtgtggca atcaagacct tgaagggtgg ctacacggag
2341 cggcagcggc gtgagtttct gagcagggcc tccatcatgg gccagttcga gcacccaat
2401 atcatccgcc tggagggcgt ggtcaccaac agcatgccc  tcatgattct cacagagttc
2461 atggagaacg gcgccctgga ctcttctctg cggctaaacg acggacagtt cacagtcac
2521 cagctcgtgg gcatgctgcg gggcatcgcc tcgggcatgc ggtaccttgc cgagatgagc
2581 tacgtccacc gagacctggc tgctcgcaac atcctagtca acagcaacct cgtctgcaaa
2641 gtgtctgact ttggcctttc ccgattcctg gaggagaact cttccgatcc cacctacagc
2701 agctccctgg gaggaagat  tcccatccga tggactgccc cggaggccat tgccttcggg
2761 aagttcactt ccgccagtga tgcctggagt tacgggattg tgatgtggga ggtgatgtca
2821 tttggggaga ggccgtactg ggacatgagc aatcaggacg tgatcaatgc catttgaacag
2881 gactaccggc tgcccccgcc cccagactgt cccacctccc tccaccagct catgctggac
2941 tgttggcaga aagaccggaa tgcccggccc cgcttcccc  aggtggtcag cgccctggac
3001 aagatgtacc ggaacccgc  cagcctcaaa actgtggccc gggagaaatg cggggcctca
3061 caccctctcc tggaccagcg gcagcctcac tactcagctt ttggctctgt gggcgagtg
3121 cttcggggcca tcaaaatggg aagatacgaa gaaagtctcg cagccgctgg ctttgggtcc
3181 ttcgagctgg tcagccagat ctctgctgag gacctgctcc gaatcggagt cactctggcg

```

Fig. 62(b)

```

3241 ggacaccaga agaaaatctt ggccagtgtc cagcacatga agtcccaggc caagccggga
3301 accccgggtg ggacaggagg accggccccc cagtactgac ctgcagggaac tccccacccc
3361 agggacaccg cctccccatt ttccggggca gagtggggac tcacagaggc cccagccctt
3421 gtgccccgct ggattgcaact ttgagcccggt ggggtgagga gttggcaatt tggagagaca
3481 ggatttgggg gttctgccat aataggaggg gaaaatcacc cccagccac ctcggggaac
3541 tccagaccaa ggggtgagggc gcctttccct caggactggg tgtgaccaga ggaaaaggaa
3601 gtgcccaca tctccagcc tccccagggt cccccctcac ctgatgggt gcgttcccgc
3661 agaccaaaga gagtgtgact cccttgccag ctccagagt ggggggctgt cccagggggc
3721 aagaaggggt gtcaggggcc agtgacaaaa tcattggggg ttgtagtccc aacttgctgc
3781 tgtcaccacc aaactcaatc atttttttcc cttgtaaatg cccctcccc agctgctgcc
3841 ttcataattga aggtttttga gttttgtttt tgggtctaat ttttctcccc gttccctttt
3901 tgtttcttcg ttttgttttt ctaccgtcct tgtcataact ttgtgttgga gggaacctgt
3961 ttcactatgg cctcctttgc ccaagttgaa acagggggcc atcatcatgt ctgtttccag
4021 aacagtgcct tggtcatccc acatccccgg accccgcctg ggacccccaa gctgtgtcct
4081 atgaaggggt gtgggggtgag gtagtgaaaa gggcggtagt tgggtggtgga acccagaaac
4141 ggacgccggt gcttggagggt gttcttaaat tatatttaaa aaagtaactt tttgtataaa
4201 taaaagaaaa tgggacgtgt cccagctcca ggggt

```

Fig. 63(a)

FIGURE 63. EphrinB2 Gene

```

1  ggcgcctcggg gctgcctcgg ggcgcacgcc gtcttccccg ccagtctgcc ccggaggatt
61  ggggggtccca gctgcgtcc cgtcagtcgc ttcttggccc ggagtgcgcg gagctgggag
121  tggcttcgccc atggctcgcg gaagggactc cgtgtgggaag taactcctggg ctgattctgat
181  ggttttatgcg agaactcgcg ttcccaaatc gatagtttta gacccatctc attggaattc
241  ctccgaactcc aagtaagtgg cgtccgcgat cccctatgt cccgcgcccg gggtcgcgcg
301  cgccgtccggg gcgggaggag gggtcagtcg gcggggcctc ggagcctgtt tctggaacct
361  cggttccccg tccccaccc ccaacccccg cccatttca ctagggtggag actcctcgct
421  cggctttcca acccgagccc cgtcggaaag gacgggtctc ccgcctttcc tccccgaac
481  gctcccaggc gctaaaagct actatcggct cgggtgtcaa gtccgggaag gtgtccgatg
541  gcgatacctg accctctcct gttttcgagg acgaaggaca tggccacaat ctaggctggc
601  cggcacgcgc ggactggagg gctctggaga gaggcggaga tgctgcattc gcggggagcg
661  cgggcggcgt ggtccggggc ccgcgggcgg cgcaccgggg tggcaggacg ctggcagcga
721  agcgcgttct ggagagggga gcctggagtc gctacgctgc ccgcagagcc ctggagccgg
781  ggcgccttgg caccgcgccg ccagcccgag ggtgcgcggg gagctcgcct gcttcgcagg
841  agaactcggg cgtcagagcc tttcctccgc gccggggaga cgggccttag gcttctccct
901  gagggcccg cgcacctcgg cctcccgctt cgttcataag ccggtagccc cggagtatgc
961  ggtctcgatg gccgacctga ttgtaatgca ctctctataa aagcttaggg ccctgccag
1021  tgcagactgc tccggaagcc ttctccctcg ggacctgggt aggaatggga tcccttaggat
1081  cagatttgct cttaccggac tctacagccg ggagcgagcc aggccttggt gagagtaact
1141  ttcagtttgg gccaccagag tgcattcaga atttagaaaa tcccatccat cctaaatct
1201  gtgtggtcat aactcgtagt catctgggta ttcagtactg tgtatccctt tatttcgaat
1261  cacagccaaa acatatttta cagaatcttg gaattgtagt ctcggaagac ttggagaaga
1321  agtatgcaga cattagctgg tttctggaga aaacgtttga gatcagaagc aaaatcaatg
1381  gcctaattga agttgagcaa gttgggcctg gttttaggag aaaagaaatg ggggattgat
1441  ttagaaatca cgtcttaaag gagtgtgttc attctcttaa aagtgtcaaa tttcaaattc
1501  actaacatgt taaccaagaa tcccttcagt aaagggcgca aaacgtcggg tacaaatcgg
1561  tttaaacaaa tgtttgtatg atgctagaag gcactttcaa caccgctcat acggagaagt
1621  tacttagctc tgccctcctc catgtagtct gctcttgcat ggattatatt tttaatgtaa
1681  attgttgtat ttgctgatga agtactggcg gcggcatctt tgcacgatg ccggctcggg
1741  aggcgccagg tgggtgccga aggagccggg ctaggacctc gcgcagcagc gggtcocgga
1801  gtccgggaga ggcgggcggg cgggcgaggc ggtcgcgggg agcccgcggc gccgctgccc
1861  gccgggtgcc tccagaggtc actcttccat gcggaatcgc gcagcgccag gcctcgcccc
1921  tccccaggc cgctgctcc agccactctg cactttcact gaccggttct ctttgaggct
1981  gttttttttt ttcttatgag gatttaatat ttctgtttaa atctagttga aagcaattcc
2041  gttagcctct tcagcgttta gttcgggtgtg tgtatcttta tctttgcgct atattaacta
2101  ttagtttgtg tgtatccggt aggagaatta gaaataccta gttgggagaa aaagaaaagt
2161  agaacaatag ttatttcaac ctaaggttta gacgttaata acttcttttt gtaatgtgtc
2221  gagatggggg gtccctgggg gaggtgacag gtactcacca ctcccccccc ccattctgat
2281  gatgaagatg agtctgtctt tccagctatg tccagacctg cgagggccct gcgtttctgg
2341  aagcctgccg tttgcgcggt tgaggttgct gctgctgtct tgtctccac agcagcattt
2401  ctttttaaat tctcctgata acggcctgcc tggatgactg gataatgtgt gcctggaaaa
2461  ggtctccctt gcagctgaat gctagctcca gagatcagaa agatttcttc ctgtaggagc
2521  cataggaaag agtctctctt aagtttttga gaatgcatac aacccctga tgacaggggg
2581  tcgctttcct tggggaagtt ttatatattt ttccagagga aagtttgaat cggtaaatat
2641  gatgtggcag gaaggtaatc aaatgcattg aagtttcaca tcagttccta tgaactgtgg
2701  aacaattcat ttgtaatgaa gccgccatca gtaattagat ttgtttcatt cagaggtcag
2761  ctttttttagc aggtggtcga cacagggagc atgcagcagc tgtttggata cagggtccag
2821  aaaacctttt gtaaattcag cgtctccgta actactttta tcacattgtc ggctctcccg
2881  tccctgactg tatgtaataa tggaaagatg tccctgcgtg tgaaacagta ggtccctgtg
2941  taggttattc acattgcttt gatacgttct ggtagagttg ggtccgttgt agccattttg
3001  gttgttttaa gttttggttt tttttttgtt ttttttttaa ttcagcagag aacagtaatg
3061  cctagcttcc gtttttaact taacacttca gtagaacatt ttcttccaag agggagattt
3121  tggcctaagt aaagtagtgg gctctttttt aaaaaaaaaa taattttact ttaatgtgag
3181  caaatctgta ttggtatggt gttctgcaat gcattacact gactttgaaa atttcgagta
3241  ctaatgcctt atgtctgggg ttaccattcc ctgtgcatca catactagtt agttaacata

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Fig. 63(b)

```

3301 gcatttttgc tttcccatgt aatTTTTTcc ctatataata ctggattcct gataactaatt
3361 gacttgatac aaaagaatgg ctggatgata tccagataac gtataataca tgggcttcac
3421 cacaatcagg ctctgaataa atacagacct gtcagagatt gataaaaataa actacaatgg
3481 atagtgtgtt ttaaaccagtc cattcaataa catatataag ccagcctgcc ttccattgtg
3541 tctgaaattc ttatttttgt aggtaaacaa atgcacattc agcactgatt gaatagcccc
3601 ttgaactatg ctccacagtt tgcgtttggg ttaatcttgt cggttttaat atagagagaa
3661 aaaagctcaa agcaccaggg gtggaattgt tagtgctttc acatccacat tccctacatt
3721 ttgtcaggat gataaactgt aggtaatgga ctgtcgttgt tctgcaggac aactgagcca
3781 ggcagagcac aaagactaag ctaaagcgat acctcacaac atgcttggta gccttctttt
3841 cagatgagaa tttatttgag aatcatgtgt ctagggaactg cacatcttaa cctcaacagt
3901 tacagcttca agccccagaa acaggagctg gaggttaaga tgatttgcta agcacctggt
3961 tctaatactc ttacaaagca taagctgttg acgctgggtc tgccgacgca aagacatgca
4021 gatgactcca acatttccag aggccttctga cttaaagctaa agtgtgtgga cagggtgaatt
4081 cgccatgggc ctggagacca gcttgctaaa aactatgtgt ttgaatggtt cctccagaca
4141 gagttagctg aagaacaatt ggtggattta tattaataacc tcttgcttgt aaacttactg
4201 aggtgcatcc ttcggttggg ggatcagtga gataattgcc ttcagatgga cattgcaact
4261 ggagcaacta aatccttgct gtctttcctt cctctgaaat cttccaggta gctcccgaga
4321 gcttcagtat gacaccaaac ttcggggcag gtttttagagt gcgttcacct aatgggaaac
4381 tattcgagat cccagcgtga tctcagtaat gcgtcatagg aatgggagtg gcaggggaaa
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4501 tttatgagaa cttcattctt aaaatactta attgcaaatt agacaaatag aagtgtctct
4561 ctaaggaagg tgattaaact ggtcctccta tcagcctaatt ctctgcctgc ctttgctgct
4621 gacataaaga acctgttttt caggtcactt aatatacatc tacatagatt tgcttatgag
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6601 ttgttgttgt tgtttttttt ttttaaagag cagcataggg cccttctaga ctcttgattt
6661 ctgtgtctga caaaaatggt cattaaattg gcaatattat aatttagacc catttcactg

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Fig. 63(c)

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6721 attttgttcc aaattctcaa ctgacttgag catctgtttg gggctgtaga tacattgccc
6781 ttgttgactg tttttctcgt ttctatggga attactgtag ccattactat gtagctttca
6841 tagactcaaa acattttttaa agtattgcat ataggctggc catatccagt gcctgttact
6901 ttaccttctt tttctaactt aatgcagcag tctgtattaa cagatccatt tcatttgtct
6961 agcttcatca gagagaggct acccctgat ttacaggctg ctcacatcca agcaccttgc
7021 attctacact tgacagtgat tgctaattggc ccattcaact aaagtatttg cttgttaaca
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Fig. 63(d)

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10141 cttaaacttc ttgatgttaa tttattttgt ttacctgcca aacttctact cattccttat
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Fig. 63(e)

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Fig. 63(f)

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17701 cagactttat taaatgacac ctctctctaa ccactctctg tctgggcgaa gtttaacaag
17761 aacagcctcc ccccatgtgg tatgggttgt aactgtggcg gtttccctct gctgtttttg
17821 gttacaagat gaacattatc tgaacacaca gaaagaaatc tgtatttggc atccataatg
17881 gaaagtcagt ttagtaattt aaacttagcc agttatcatc atcataattc tttttaacac
17941 tttcaaagtc agcataggag aagtgtattg ttgaatatta caaaatattt agggcataga
18001 tagatgtgct gtgtagtttg atttgttaat gtgtctaagc aatcaaagca acagaattca
18061 taataaaacc ccactacttc caaaatagga actctgttta ctgacttgat tataacatat
18121 ggaactcaat tgttttccat taaaaatgaa tactattagg aaactcacc cttttctttt
18181 tcatatatat tctgctattt gcataattgt ctggagtcca tatgtaatat taaatgtaaa
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20281 gggcttgtaa tttaggaata cttcccttaa tagtagctaa cccttatata gtgctgtctg
20341 tgcaggctac aaaaggagca gattaaggat agaaaagggt tggagtgtat gagaaacctt

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Fig. 63(g)

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20401 aggcaggaat tgactcctgg tgtttgtaaa ccttaaagat gtccataaaa ggtcaaggaa
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20521 tttgtactta ctgcccggca tcttgccctga ggtttttaac ctccagcagca catcagaatt
20581 actgtgtgtg tgttggaggg gctgggggag ataaagaaat tagcctcctc ccaaaccattc
20641 tgattcagtc tgttacttga gaaactgaat tgtgttttgt ccataaagaa gatgaaattg
20701 tctacagaga acacattgcc attcacaagg ttgaggggat accacagaga ggctcccact
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20881 tgaatgaatg tcatatatcc ttgctaaagg agctcagtta aaaaaaagg gaccatcctt
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23641 ggctggcggt cagtggcatg atcacagctc actgtagcct tgaactccag ggctcaagtg
23701 atcctcccac ctcagcctcc aagtagctcg gactacaggc atgtgccact gcaccagct
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Fig. 63(h)

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23821 gagtagctta ccaagaatta gtaacaacaa caacaagaaa aaaaagagag aatgtggtag
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23941 agatggggtg gccaaagtatg cagcatagta gggaaatctt tgaaaatgta aaatagttac
24001 caggtaaaat aaatggaaac ttttaagcttt tggaagccta acaatgtatt tatattagta
24061 aagactttat ttttttattt ttttttattt tttttttgag acggagtctc tctctttcgt
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Fig. 63(i)

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Fig. 63(j)

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30661 tgtgatgtcc atctaagctg tgtgtgtcca tgagagtgc gcattttctc ctctgcagtg
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31141 tacagctaata atagacaata ggggaattatg ttttatcttt agaactctta cattattctt
31201 ttctttaaaa atgtgagctg agtcattgct attgcagtgg tcatctggcc gcctattttt
31261 aaaacacaat tcctctatct tagtagattt tggcccatat taagcatatc aagaatgact
31321 tttttttttt caagacatgg ggttttattg ggggcttata tacaaggaaa gagagagtcc
31381 agtggcagtg ggctggacaa gatattccaga tggccctgtg gcagtgaact gggcaggaaa
31441 actgcaactg ctgtcaaaca cctgtgatgt cacttatagc attttcactt aacaccacc
31501 agctaataac ttccacctgg caaccttcat ttaatccaga acttaggacc tgcagtccct
31561 gtacggccca tgttccacag gatgggcccga gggctcagct gttcctcata gacaaggaat
31621 gactctccac attggccact ccggtattcc ctgactcagg acacatatcc aggtgtgtct
31681 aaggctggct cttctatgtg aagttactta ttcttttacc attgactctc atgttccac
31741 tatattaagt ttttctgaat tactgtggca ataagaaacg gtcccttaaa ttatactaga
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31921 aaagtgatgt ttttctcaa cagaatttat taaaaatcaa gacaccaagc tgttccaaac
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32701 gaataattga aattaaagaa ataaaaactg accattttct ttaagagcat ccattgttac
32761 ttgataacat cttcagtcac atttcaatgc tggcaaagag gaggggagtt ctaaactgtg
32821 actcaatttt agaactact ttttccaaat tattctgttt agtgcagaaa actaattaat
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32941 ctgctttaag ttttcaaaac acaaccatag caatgtggta ttaattcaag tgattcttcc
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33061 ttatacagtg ttttagctgt ggctccctgc atgcaaaata agagttaatc aaatgtcagt
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33181 tttcttcttg aaaataaatt ctgggcccgg cgcggtggct cagcctgta atcctagcac
33241 tttgggaggg cgaggcgggc ggatcacgag gtcaggagat cgagaccaa ctggctaaca
33301 ctgtgaaacc ccgtctctac taaaaataca aaaaatgagc cgggtgtggg ggcgggctcc
33361 ttagtccca gctactcggg aggtgagggc aggagaatgg cgtgaacctg ggaggcagag
33421 cttgtggtga gccaaagatc caccactgca ctccagcctg ggtgacagag cgagactccg
33481 tctcaaaaaa aaaaaaaagg aaaataaatt ctctgtatt tttctttctt caagtgagge
33541 catttagggg aaagtatacc ataaaacttg ctctaagata aggcaaattt ggtattatag
33601 gatgaagtgc tatgtgattt gaagtaatgc tgaatttttt aaatatatta aactaaacaa
33661 gaataatgag gccctcgga agtcatgatt atatttctca tttttctcat tttaaagcca
33721 cagtgaaaaa cacataaaag gaagaagtta gaaaaaaaaa tgaatgaaat tcttttttct
33781 cttttggcaa attaaataga tgtttctgtt tcagaagatt ttattaatta actttaaaga
33841 aacagtcatt tatttttggc attcagtga cactatcatt tccatgttta gaacttttct
33901 tctaagttag catcttaaaa gataactgtg aaactcaagg cattcaacta cattaatttg
33961 agtttcagaa attgaattct tgtttctaga gtacatagtt tgaattgatg tcagggtgtt
34021 aaatagataa atcttagctt cctaggttgt atattcacac taattatttt tttatcagcc

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Fig. 63(k)

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34081 ttcttatttt tcaacttacc ttattctttt tgtttttttg acactcagat ttgatagccc
34141 tgtggtagaa gaaaacagta atacagtttg gtttgttggt gtgtttgtgt ttattttaaa
34201 gtcacggcct tgctttccat gttgttactg gattatgctt tttttaattc ttcagtttgc
34261 caagataaca gtcttccgat cttcagaagt ctgtatcaag ctttaaggaaa ctgatgtgta
34321 ggaagactcg cctaagaagt ccaaattagc aaggctagca tgtgaggaca tgctggaaaa
34381 gaatagtccc catagatatt gacagagaat gttcataaaa tgctacttgt tttgtgggta
34441 catgagagta acttgtgtcc agtgcagctg tatgtaaggg caacgttttt attctgacga
34501 ctctgtgggt ttcatgaccc tggatgctta tcatgtctct ctgttggaact tcttcaacgg
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34621 acaaatacgc tacattttta aataatttga aataccctca atagtattta tatttcctgg
34681 tgcttcattc tttccataag aactgtgata ccattattct gtaggatttt tttgtgcttc
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35161 gaactttttt gctgagcagt aatctctacc cactggaaat taggccctgg ggggaacaat
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35641 tggaaataga ttttttttcc caagcattag caatttcttg ttatttttca aaatcagcca
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35941 atcaagtata aaatagactg aagtcatttt gaattacgtt atacttgtaa agtttacctc
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36061 tcatttctaa ctcatggcaa aaatctttcc tgggtggaacg tgtaactgta ttttaaatgc
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36781 ctctactgtg cctgtttttc tcttgctgat actcatttaa ttgtttttct tttggatctg
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36901 tctttctgtg cactgccctt cagatctcat tttgtcattt tttagcttag tgtgaaact
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37081 gattccacct gaatgaagta aaccaaactat tttaaactat cagccagata gagacatcag
37141 cctttcactt ctttctatat gcagacatat cctaattttt tagaaaaatc aaataggaaa
37201 attctcaaca attaattgaa gattatagct ctgctctgaa atgggtccaga aataggatct
37261 gctcatagaa actcatagtt tgaagcctct gggaggaaaag gatactttta aatttagtca
37321 catatttgga ggagggaaaa gggaaagagc agaatgaaga actgaaaaaa atcacacacc
37381 ggggcctgtc gtgaggtggg ggactggggg agggatagca ttaggagata tacctaagt
37441 aaatgacgag ttaacaggcg cagcccacca acatggcaca cgtatacata tgaacaaac

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Fig. 63(I)

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37501 ctgcacgttg tgcacatgta ccctagaact taaagtataa taaaaaaaaa ttttaatagc
37561 cccattaaat aattaaaaag atttttttta gattcacaga agtgtacaaa attttttaggt
37621 tttttttttt ttaagctgtc tgcgtgaatag tttcttaatg gtctacaatg tttgtatcta
37681 caaacagata ctgtctgctt cttactaccc ttccaagaca agtattatta tggcaattat
37741 tgcccagttt cccgggaaaa atttatccac agttacagaa gaatgagatg caattgtgag
37801 actgtaaagt ttaagcaagc actcagagaa gcacagtgat atgtatgcac agaagaggca
37861 gtctttgttt tgaggaaaac agtgaaagta aagttaattc aagaccacaa agacaagtaa
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39721 acagaagagt tttgttcatt gtgacttttc caatatagat aacctattgt gcagaaagaa
39781 ataattattc ttctaattaa aaattgggtat agtagtcaat caacttgcct agttaaattg
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40741 taccagataa aattgtccgt cgttgacctt cgttttctta acagtcttgg aacaaatagt
40801 tctgtatttg ttaccatgct aatgaaggtt ttatagagta gctgttgagc agacatcagc
40861 agttttgtat taggattgtt gtgtgcttgc ttggctggtg tgcaaattha tgcgtctgcag

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Fig. 63(m)

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40921 caatattcca tccctttcca agagtcaagg aggggaagttg ttattttctaa ctttcaatga
40981 caagatgtgt caaattcttg tgacaaactg ataaatggat aatataatga tgccaggcag
41041 ttttttagtg cttaacattt gggctggcag tctgttcggt gtgagagttt ctgctgcctt
41101 ccaaataatat ttttaagtgt aatcaaataa tacagacgag ttacgagctg aacattttcc
41161 caggccccct cactccttcc gcgttcccgga gctgttctgt tctgccagga ggcagggtc
41221 ttcttttagaa ggcaggccct ttgaagggtt gcatgaaact ccctttctca aaggaggcgg
41281 aagagacaata ccacataaac gctcaccgct gacctggaga attggccact tccctttttc
41341 ttccctgccg ctgccccagg ctggctgaca cgggttagaa gatgaagcaa gatcaagggc
41401 tggctgtcac cgacagtctg tgctcttgct ggataatgat acaaaggaaa ccctgtggct
41461 tgggagggta ggggaagtccc tcttagagat acctctcatt tccttttgcg ttgagctctt
41521 agacgaggta ttggcgaggc aaagtccagc ttctagttag taataagcct ggcttatttt
41581 tcacattttt aagggtcata aaagcagttc gtctgcactg ggacagcagt aactatctct
41641 gaccttttct gtctccgcgt ctgcaggttc tagcacagac ggcaacagcg ccggacattc
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43801 tctcacggaa ccgtagacta ggaagtacga gccccacaga gcaggaagcc gatgtgactg
43861 catcatatat ttaacaatga caagatgttc cggcggttat ttctgcgttg ggttttccct
43921 tgccttatgt gctgaagtgt tctctaga

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FIGURE 64. EphrinB2, mRNA

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1  gcgcggagct  gggagtggct  tcgccatggc  tgtgagaagg  gactccgtgt  ggaagtactg
61  ctgggggtgtt  ttgatggttt  tatgcagaac  tgcgatttcc  aaatcgatag  ttttagagcc
121  tatctattgg  aattcctcga  actccaaatt  tctacctgga  caaggactgg  tactataccc
181  acagatagga  gacaaattgg  atattatttt  ccccaaagtg  gactctaaaa  ctggttgcca
241  gtatgaatat  tataaagttt  atatggttga  taaagaccaa  gcagacagat  gcactattaa
301  gaaggaaaaat  acccctctcc  tcaactgtgc  caaaccagac  caagatatca  aattcaccat
361  caagtttcaa  gaattcagcc  ctaacctctg  gggctctaga  tttcagaaga  acaaagatta
421  ttacattata  tctacatcaa  atgggtcttt  ggaggggcctg  gataaccagg  agggaggggt
481  gtgccagaca  agagccatga  agatcctcat  gaaagtggga  caagatgcaa  gttctgctgg
541  atcaaccagg  aataaagatc  caacaagacg  tccagaacta  gaagctggta  caaatggaag
601  aagttcgaca  acaagtccct  ttgtaaaacc  aaatccaggt  tctagcacag  acgggaacag
661  cgccggacat  tcggggaaca  acatcctcgg  ttccgaagtg  gccttatttg  cagggtattg
721  ttcaggatgc  atcatcttca  tcgtcatcat  catcacgctg  gtggtcctct  tgcgtaagta
781  ccggaggaga  cacaggaagc  actcgccgca  gcacacgacc  acgctgtcgc  tcagcacact
841  ggccacaccc  aagcgcagcg  gcaacaacaa  cggctcagag  cccagtgaca  ttatcatccc
901  gctaaggact  gcggacagcg  tcttctgccc  tcaactacgag  aaggtcagcg  gggactacgg
961  gcaccgggtg  tacatcgtec  aggagatgac  cccgcagagc  ccggcgaaac  tttactacaa
1021  ggtctgagag  ggaccctggt  ggtacctgtg  ctttccaga  ggacacctaa  tgcctccatg
1081  cctcccttga  gggtttgaga  gcccgcgtgc  tggagaattg  actgaagcac  agcggggggg
1141  gagagggaca  ctctcctcgc  gaagagcccg  tcgcgctgga  cagcttacct  agtctgttag
1201  cattcggcct  tggatgaacac  acacgctccc  tggagagctg  aagactgtgc  agaagacgcc
1261  cattcggaact  gctgtgccgc  gtcccacgtc  tctcctcga  agccatgtgc  tgcggtcact
1321  caggcctctg  cagaagccaa  gggaagacag  tggtttgtgg  acgagagggc  tgtgagcatc
1381  ctggcaggtg  ccccaggatg  ccacgcctgg  aagggccggc  ttctgctggg  ggtgcatttc
1441  ccccgagtg  cataccggac  ttgtcacacg  gacctcgggc  tagttaaggt  gtgcaaagat
1501  ctctagagtt  tagtccttac  tgtctcactc  gttctgttac  ccagggtctc  gcagcacctc
1561  acctgagacc  tccactccac  atctgcatca  ctcatggaac  actcatgtct  ggagtcctct
1621  cctccagccg  ctggcaacaa  cagcttcagt  ccatgggtaa  tccgttcata  gaaatttgtt
1681  ttgctaacaa  ggtgcccttt  agccagatgc  taggctgtct  gcgaagaagg  ctaggagttc
1741  atagaaggga  gtggggctgg  ggaaagggtc  ggctgcaatt  gcagctcact  gctgctgctt
1801  ctgaaacaga  aagttggaaa  ggaaaaaaga  aaaaagcaat  taggtagcac  agcacttttg
1861  ttttgctgag  atcgaagagg  ccagtaggag  acacgacagc  acacacagtg  gattccagtg
1921  catggggagg  cactcgtgtg  tatcaaatag  cgatgtgcag  gaagaaaagc  cctcttcat
1981  tccgggggaa  aaagacgggt  attgttggga  aaggaacagg  cttggaggga  ggggagaaag
2041  taggcccgtg  atgatataat  cgggcaggac  tgttgttgta  ctggcaataa  gatacacagc
2101  tccgagctgt  aggagagtgc  gtctgctttg  gatgattttt  taagcagact  cagctgctat
2161  acttatcaca  ttttattaaa  cacagggaaa  gcatttagga  gaatagcaga  gagccaaatc
2221  tgacctaaaa  gttgaaaagc  caaagggtca  acaggctgta  attccatcat  catcgttgtt
2281  attaaagaat  cttatctat  aaaaggtagg  tcagatcccc  ctccccccag  gttcctcctt
2341  cccctcccga  ttgagcctta  cgacactttg  gtttatgcgg  tgctgtccgg  gtgccagggc
2401  tgcagggtcg  gtactgatgg  aggctgcagc  gcccggtgct  ctgtgtcaag  gtgaagcaca
2461  tacggcagac  ctcttagagt  ccttaagacg  gaagtaaatt  atgatgtcca  gggggagaag
2521  gaagatagga  cgtatttata  ataggtatat  agaacacaag  ggatataaaa  tgaaagattt
2581  ttactaatat  atattttaag  gttgcacaca  gtacacacca  gaagatgtga  aattcatttg
2641  tggcaattaa  gtggtcccaa  tgctcagcgc  ttaaaaaaac  aaattggaca  gctacttctg
2701  ggaaaaacaa  catcattcca  aaaagaacaa  taatgagagc  aaatgcaaaa  ataaccaagt
2761  cctccgaagg  catctcacgg  aaccgtagac  taggaagtac  gagccccaca  gagccgaag
2821  ccgatgtgac  tgcacatcat  atttaacaat  gacaagatgt  tccggcgttt  attctgcgt
2881  tgggttttcc  cttgccttat  gggctgaagt  gttctctaga  atccagcagg  tcacactggg
2941  ggcttcaggt  gacgatttag  ctgtggctcc  ctctcctgt  cctccccgc  acccctccc
3001  ttctgggaaa  caagaagagt  aaacaggaaa  cctacttttt  atgtgctatg  caaaatagac
3061  atctttaaca  tagtcctggt  actatggtaa  cactttgctt  tctgaattgg  aagggaaaaa
3121  aaatgtagcg  acagcatttt  aaggttctca  gacctccagt  gagtacctgc  aaaaatgagt
3181  tgtcacagaa  attatgatcc  tctatttctc  gaacctggaa  atgatgttgg  tccaaagtgc
3241  gtgtgtgtat  gtgtgagtgg  gtgcgtggta  tacatgtgta  catatatgta  taatatatat

```

Fig. 64(b)

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3301 ctacaatata tattatatat atctatatca tatttctgtg gaggggttgcc atggtaacca
3361 gccacagtac atatgtaatt ctttccatca ccccaacctc tcctttctgt gcattcatgc
3421 aagagtttct tgtaagccat cagaagttac ttttaggatg ggggagaggg gcgagaaggg
3481 gaaaaatggg aaatagtctg attttaatga aatcaaagt atgtatcatc agttggctac
3541 gttttgggtc tatgctaaac tgtgaaaaat cagatgaatt gataaaagag ttccctgcaa
3601 ccaattgaaa agtgttctgt gcgtctgtt tgtgtctggt gcagaatatg acaatctacc
3661 aactgtccct ttgtttgaag ttggtttagc tttggaaagt tactgtaaat gccttgcttg
3721 tatgatcgtc cctggtcacc cgactttgga atttgcacca tcatgtttca gtgaagatgc
3781 tgtaaatagg ttcagatttt actgtctatg gatttggggt gttacagtag ccttattcac
3841 ctttttaata aaaatacaca tgaaaacaag aaagaaatgg cttttcttac ccagattgtg
3901 tacatagagc aatgttggtt ttttataaag tctaagcaag atgttttgta taaaatctga
3961 attttgcaat gtatttagct acagcttggt taacggcagt gtcattcccc tttgcactgt
4021 aatgaggaaa aaatgggata aaaggttgcc aaattgctgc atatttgctgc cgtaattatg
4081 taccatgaat atttatttaa aatttcggtt tccaatttgt aagtaacaca gtattatgcc
4141 tgagttataa atattttttt ctttctttgt tttattttta tagcctgtca taggttttaa
4201 atctgcttta gtttcacatt gcagttagcc ccagaaaatg aaatccgtga agtcacattc
4261 cacatctgtt tcaaactgaa tttgttctta aaaaaataaa atattttttt cctatggaaa
4321 aaaaaaaaaa aaaaa

```

FIGURE 65. EphB4 Precursor Protein

```

1 melrvllcwa slaaaaleetl lntkletadl kwvtfpqvdg qweelsglde eqhsvrtyev
61 cdvqrapgga hwlrtgwvpr rgavhvyatl rftmleclsl pragrsket ftfvyyesda
121 dtatalt paw menpyikvdt vaaehltrkr pgaeatgkvn vktlrlgpls kagfylafqd
181 qgacmallsl hl fykkcaql tvnltrfpet vprelvvpva gscvvdavpa pgpspslycr
241 edgqwaeqp v tgcscapgfe aaegntkcra caqgtfkpls gegscqpcpa nshsntigsa
301 vcqcrvygfr artdprgapc ttpsaprsv vsrlngsslh lewsaplesg gredltyalr
361 crecrpggsc apcggdltfd pgprdlvepw vvvr glrpdf tytfvta ln gvsslatgpv
421 pfepvnttd revppavsd i rvtrsspss l slawavprap sgavldyevk yhekgaegps
481 svrflkten raelrglkrg asylvqvrar seagygpfgq ehhsqtqlde segwreqlal
541 iagtavvgv l vlvvivvav lclrkqsngr eaeysdkhgq ylighgtkvy idpftyedpn
601 eavrefakei dvsyvk ieev igagefgevc rgrlkapgk k escvaiktlk ggyterqrre
661 flseasingq fehpn iirle gvttnsmpvm iltefmenga ldsflrlndg qftviqlvgm
721 lrgiasgmry laemsvhrd laarnilvns nlvckvsdfg lsrflenss dptytssl gg
781 kipirwtape aiafrkftsa sdawsygimv wevmsfgerp ywdmsnq dvi naieqdyrlp
841 pppdcptslh qlmldcwqkd rnarprfpqv vsaldkmirn paslkivare nggashplld
901 qrqphysafg svgewlraik mgryeesfaa agfgsfelvs qisaedllri gvtlaghqkk
961 ilasvqhmk s qakpgtpggt ggpapgy

```

FIGURE 66. EphrinB2

```
1 mavrrdsvwk ycwgvmlvlc rtaisksivl epiywnssns kflpggglvl ypqigdkldi
61 icpkvdsktv ggyeyykvym vdkdqadrct ikkentplln cakpdqdikf tikfgefspn
121 lwglefqknk dyyiistsng slegldnqeg gvcqtramki lmkvgqdass agstrnkdp
181 rrpeleagtn grssttspfv kpnpgsstg nsaghsgnni lgsevalfag iasgciifiv
241 iitlvvlll kyrrrhkhs pqhtttlsls tlatpkrgsn nngsepsdii iplrtadsvf
301 cphyekvsd yghpvyivqe mppqspaniy ykv
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